THE

FARMER'S MAGAZINE:

MONDAY, APRIL 13. 1801.

(N°. VI.)

PART I.

ORIGINAL COMMUNICATIONS.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Observations on the Means of Improving Haugh Lands.

GENTLEMEN,

THE following observations are offered through the medium of your Magazine, with a view to draw the attention of the public to a subject which, though of considerable importance, has hitherto been very much neglected. I mean the management of that description of property, known in Scotland by the name of *haugh lands*, which in too many instances have been left either entirely, or in a great measure, to the mercy of the waters that run through them.

In the lower parts of the kingdom much loss has been occasioned by this neglect, and many extensive tracts on the banks of rivers and streams, which might with small expence or trouble have been rendered very valuable, are at present in a great measure useless to the community.

In the hilly and upland parts the loss is still greater, as in such situations their best soil, and that on which their principal dependence for corn and hay is placed, is their haugh lands. Throughout the whole of these districts, there are

hollows, between the different ranges of hills and high lands, through which rivers or rivulets take their course, upon the banks of which there is generally an extent of soil of a good quality, consisting principally of the finest particles of earth, that have been washed down by the rains from the higher grounds, and which, by the accumulation of ages, have formed a soil of such depth and quality, as to be fit for the production of the most valuable crops. In their present state, however, their value is trifling, compared to what it might be under different management; for, owing to the stagnation of water in some places, a considerable part is either covered with flags, and rushes, or converted into morasses, and the remainder, owing to the frequent inundations to which it is exposed, partly from the overflowings of the rivers or rivulets, and partly to the torrents which descend from the hills during heavy falls of rain, can never be cultivated with safety or advantage, for grain; even the small spots that are reserved for hay, are far from yielding certain or profitable returns, the whole crop being in many instances either much damaged, or entirely carried off by the floods in a very few hours; in that way, the cultivation of considerable tracts of the best soil in the kingdom has been abandoned, and the principal advantage at present derived from them consists, in some places, of bad pasture, and in others, of a quantity of coarse rushy hay.

The rivers or streams that run through these haugh lands, being left entirely to themselves, and having no proper boundary, generally take a serpentine course, and, by wandering through the valley in every direction, not only occupy three, four, or five times the space of ground they ought to do, but, by their frequent windings, the declivity is so much lessened, that the water runs very slow, indeed almost stagnates at every turn; and, when swelled by any sudden fall of rain, the banks are not only overflowed, but if by accident the adjoining lands are under tillage, or any part of the surface broke, the water frequently forsakes its old course, makes a new channel for itself, and in that way breaks, cuts up, and destroys, the best of the soil upon its banks. Those who have lived upon the banks either of a considerable river, or even of a small stream, especially in the neighbourhood of high lands, must have observed many instances of the overflows, and consequent devastation here mentioned.

These evils, as already noticed, arise partly from the serpentine course of the water, and partly from the torrents that

pour from the hills: the first, by lessening the declivity, retards the course of the water, and occasions an overflow at every turn; the last, by having no distinct channel, through which the water might be conducted to the bed of the river, spreads over and inundates the whole of the low grounds. The above will be found a pretty just picture of that description of property throughout the island, over the greatest part of which the water has been allowed to wander at large for ages, without a single attempt to remedy the evil by confining it within proper channels.

Though intelligent readers will readily understand the cause of water taking a serpentine course, and doing so much mischief in places where no pains are taken to confine and direct it into proper channels, it is presumed, that some explanation of it will not be unacceptable, especially as such explanation will be found connected with the remedy to be afterwards proposed.

It is well known, that all bodies, whether solid or fluid, when once put in motion, continue to move in a streight line, unless they are stopt or turned out of their course by some obstructing cause. If, in their progress they meet with a body whose powers of resistance is equal to their weight and velocity combined, they will be rendered stationary; but if the resisting body has only a power to alter, and not entirely to stop their course, they will recede, or fall off from that body, in an angle directly corresponding to that in which they approached it: When a current of water, therefore, meets with an obstacle capable of altering its course, it recedes from that obstacle in an angle opposite and equal to that in which it approached it, and continues to follow that new direction, till it meets with another obstructing cause; in that way it continues to traverse the valley, every little obstruction it meets with altering its course, and giving it a new direction.

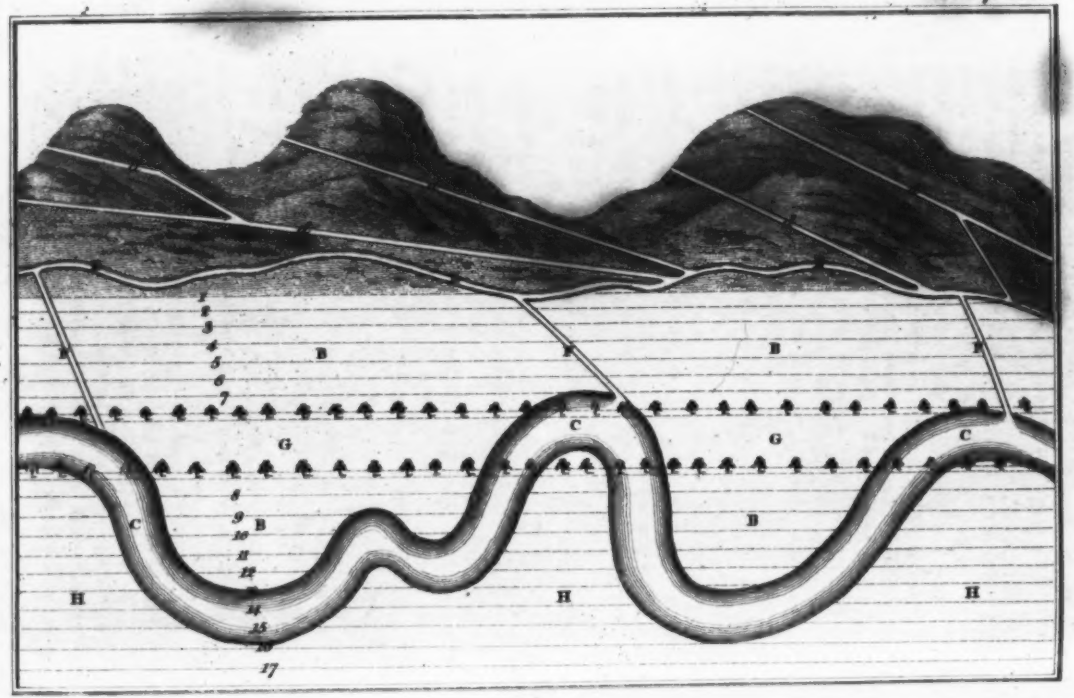
To remedy these evils, two things are necessary, *first*, to give the water a proper direction, and, as far as possible, confine it within its own bed; *secondly*, to interrupt the torrents that descend from the hills during heavy rains, and conduct them through proper channels to the main stream. To accomplish the former of these purposes, the first step necessary, is to give the river or rivulet as straight a course as possible to the nearest outfall; in that way it will enjoy the full benefit of the declivity, and flow on without interruption: The advantage of this practice will be very obvious to every person of observation; for if, in the course of a mile, the fall

taken in a straight direction is 15 feet, if the water is allowed to take a serpentine course, and make a circuit of three miles, it is plain that two thirds of the fall will in that way be lost, and, in place of 15, will be only five feet per mile of this serpentine course, in many parts of which it will be nearly a dead level, and the water, in place of running off freely, will stagnate and overflow the adjoining lands.

Objections will no doubt be made to the proposed plan of streighting the course of rivers, on account of the expence of digging, and forming a bed of depth and breadth sufficient to contain the whole of the water during floods: And certainly, upon the first view of a river or stream that has never been confined within proper channels, but allowed to traverse the whole of the flat country in its course, any attempt to confine it, would by many be deemed at once an expensive and a hopeless undertaking; upon a nearer examination, however, much of the difficulty will disappear, and the plan will not only be found more practicable, but the expence much less than was at first imagined; for, if the new channel is only made deep enough in the middle, with a large and gradual slope on each side, the current, (which by the streighting will be greatly accelerated) will very soon do the rest, and make a sufficient bed for itself; besides, as the mischief above noticed, in most cases does not arise so much from the quantity of water as from its stagnation, when that is removed, no accumulation can possibly take place, the whole will run freely and rapidly off, and a much smaller bed will be required to contain it. This will be the case even with pretty large rivers where due pains are taken; but when it is considered, that the greatest part of the waters that take their course through haugh lands, are small streams or rivulets, many of which are either dry, or nearly so, during the summer months, the success of any attempt to give them a streight course, or confine them within proper channels, will certainly appear much more flattering.

Thus much in regard to the streighting of rivers or streams: The second object remains to be mentioned, namely, the interrupting the waters which pour from the hills, or high lands during heavy rains, and conducting them through proper channels to the main stream: To do this effectually, several open drains should be cut along the face of the declivity, with a gentle inclination towards the stream into which the water, after being collected by these open drains in the face of the hill, may be let fall through other open drains at

N°6 p.123



stated distances, running also in a slanting direction towards the bed of the river. In some cases, it will be necessary to have cross drains communicating with those that run along the declivity, where that is done, the second drain from the top should be deeper and wider than that immediately above it, and so on, increasing the dimensions gradually, in proportion to the quantity of water they are meant to contain, that at the bottom being always wider and deeper than any of those above it.

It is necessary to observe, however, that when the drains running along the declivity, are connected with each other by cross drains, the latter should always be cut in such a direction as not to run in a streight line downwards, but rather obliquely; for, if the water is allowed to descend from the upper drain to that immediately below it in a straight line, it will act so powerfully against the lower side, as to occasion excavations and breaches through which it will escape, and in that way not only render the drain useless, but overflow the low grounds.

The following sketch will convey some idea of the advantage to be derived from the streighting of rivers, and interrupting the water coming from high grounds:

A. A. A. Represents a range of hilly ground;

B. B. B. B. and H H H. An extensive haugh at the bottom,

C. C. C. A river or stream running through it.

d d d d d. Open drains or ditches, cut in the face of the high ground, and sloping gradually towards the stream.

E. E. E. A deep and wide ditch at the bottom of the declivity, for receiving the water from the sloping drains, d d d d d.

F. F. F. Drains for receiving the water from the ditch, E. E. E. and conducting it to the main stream.

G. G. G. A cut proposed to be made in a streight direction for a bed to the river, in place of the serpentine course C. C. C., the banks planted with trees.

1, 2, 3, 4, to 17, Ridges running parallel to the cut G. G. G.

The ground occupied by the proposed cut, will not only be much less considerable than the bed of the serpentine course, but the haugh land on the banks will admit of being laid into regular fields, which can be laboured with much less trouble than the irregular spots represented on the serpentine banks, with the additional advantage of the whole

being completely secured, both against the overflowing of the river, and the waters from the high grounds.

It may perhaps be imagined by some, that if a ditch of sufficient dimensions is made at E. E. E., it will answer the double purpose of receiving and conducting the waters coming from the hills to the main stream, a mistake that requires little observation to correct. Water, like every other body that is falling from a height, has its velocity encreased as it descends; in cases, therefore, where it is allowed to run to the bottom in a streight direction, before any attempt is made to interrupt it, the force thus acquired will be so great, as to bid defiance to any ditch or other contrivance that can be thought of for receiving it, or checking its farther progress; whereas, when received into the drains d, d, d, d, d, and led down in a slanting direction, its force will be found comparatively small, and it may then be conducted to the bottom with great ease. Another very useful purpose will be answered, by having the open drains upon the declivity, namely, that of receiving and cutting off many of those springs that break out on the sides and near the bottom of all high lands, and render many valuable tracts swampy and unfit for cultivation.

The expence attending an undertaking of the kind proposed will, when conducted with judgment, be found small, when compared with the advantages arising from it; the soil, as well as the substratum of such haughs, consisting for the most part of loose incoherent materials, which admit of being dug or removed, with very little trouble.

Waters may be confined within their banks, and have a streight direction given them in different ways; *first*, by stone, and, *secondly*, by turf banks, where stones are plenty, which they are upon the banks of almost every river and stream in Scotland, and in many parts of England; if the bank is properly sloped and faced with them, it will be found completely to resist the encroachment of the water, especially if the stones are well bedded, and the interstices blinded or filled up with sand or clay; where a new cut is to be made, care should be taken to have it of sufficient width; after marking out the lines intended for the banks, the earth should be dug out, taking it from the middle to the full depth of the intended bed, in such a way as to form a regular and gradual slope to the top of the bank, which should be faced or covered with stones in the manner above mentioned; the earth and other materials taken out, should be employed

in filling up the old bed of the water, which will render the surface uniform, and facilitate its future improvement. It will contribute much to the durability of the banks, if, after the work is finished, a quantity of coarse hay seeds are sown; these by vegetating in the interstices between the stones, will very effectually prevent the water from insinuating amongst them, and bind and give a degree of stability, as well as beauty to the whole, which it would not otherwise have.

In cases where the stream is not rapid, and where there is little risk of the banks being washed or hurt during the summer months, facing them with sod, will form a very good barrier to the water; where that is done, however, it will be necessary to drive several rows of piles into the bank parallel to the stream, which, (if they are sufficiently strong) will add greatly to the strength of the work. In every case where it is meant to turn a stream into a new course, the most certain way of rendering the work durable, will be found to consist in forming the new cut at least a year before the water is let into it; in that way the earth of which the banks are composed will be consolidated, and the surface so completely protected by the growth of the sod, or seeds sown upon it, that there will be little risk of its being afterwards broken or penetrated.

The advantage of sloping banks, as a defence either against the waters of the ocean, or rivers, is well known; it is also known, that the greatest part of the mischief done, either by the sea or rivers, is in situations where the shore presents a perpendicular front to the water, and is at the same time composed of soft incoherent materials; and the higher the shore, and deeper the water, the greater the mischief in general is; whereas, when the bank or boundary is a gentle slope, the force of the water, in place of being increased as it rises, which is always the case where the boundary is a perpendicular, is gradually lessened, rising without injury to the top of the bank, and sinking again to its ordinary bed in the same manner. To the above observations, I have only to add, that additional benefit will arise from planting couch grass, willows, and all other plants that thrive in such situations, upon the banks where new cuts are intended to be made, the roots of which will bind and strengthen them, in such a way as to prevent their suffering from the water at any after period; indeed, upon the banks of most rivers, they grow spontaneously, and greatly assist in confining the water, and preventing it from changing its course.

The insertion of this paper in your Magazine, will, I hope, so far attract the public notice, as to call forth the exertions of others better qualified to discuss the subject, and at the same time point out to the proprietors and occupiers of such lands, the great improvement of which they are capable, and the benefit that will thereby accrue to themselves and the public. I am, Gentlemen, yours,

A. Z.

FOR THE FARMER'S MAGAZINE.

LETTER III.

Strictures on Farm-Management near London.

August 1799.

HAVING, in a former letter, at considerable length stated to you with freedom my objections against the mode of fallowing practised with you, I shall endeavour to give you my idea how a fallow ought to be conducted on your soil, so as to ensure a good succession of after crops; or, rather, I shall attempt to describe how, what I consider as a perfect fallow is managed, on similar soils, in this country; and in so doing, shall use as much brevity as the nature of the subject, and its very great importance, can admit.

As soon as possible after harvest, or, if rainy weather should then render the soil too wet for ploughing with propriety, as early in winter or spring as possible, plough the land which is intended for fallow, with a gathering furrow: Immediately after which, take effectual care to open up all the water furrows in every part of the fields, and make cross trenches with the plough and spade in every part where that operation is necessary, so that water may never be allowed to lodge on any portion of the surface. Immediately after ploughing, a labourer must go over the whole field with a spade, to clear the water furrows at every intersection with the furrows of the head and foot lands or ridges, to cut such cross trenches as cannot be drawn by the plough, and to deepen and clear out such as have been made by the plough, and require that assistance.

Land of a strong retentive nature, such as yours, will not plough to any purpose when perfectly dry; for in that state it necessarily rises in large lumps and boards, and will not reduce into tilth, for receiving the influence of the weather,

or for admitting the cleaning after-operations of the fallow process. No land whatever, more especially strong land, should ever be ploughed when in a wet state; for it immediately afterwards consolidates again, and the ploughing had every bit as well have never been given; indeed, after a wet ploughing, strong land will be found more consolidated than if it had been left alone in the state of stubble or *ley*. Between wet and dry, which may be termed *mellow*, is the state of land which should be most sedulously chosen for every ploughing which it is to receive. When, indeed, it has once been reduced into a proper tilth, it will afterwards admit of the future ploughings, harrowings, rollings, and pickings, in a dry state.

As soon in spring as other necessary operations will admit, plough the fallow land a second time.

This ploughing is to be given with a cleaving furrow: that is to say, the plough begins on each side of the ridge, cleaving it down towards the water furrow, and ends by leaving an open furrow on what was formerly the crown or top of the ridge. If the field had been previously gathered into high crowned ridges, this first cleaving must be followed immediately by another exactly of the same kind, by which the field will be reduced to a degree of leanness, which fits it properly for the succeeding operation.

Immediately after this, cross plough the field, in large bouts or fearings, but not gathering, the plits of each bout being all laid one way. Then harrow and roll the land repeatedly, gathering into heaps, with the hand or with forks and rakes, all the couch and other root weeds that have been brought up to the surface, and carry all off from the field. When these have been well rolled, by turning over two or three times in a heap, they will answer well as an addition to your compost dunghills. Some farmers, to save trouble and expence of carrying them from the fields, burn the roots when sufficiently dry, and scatter the ashes on the surface.

For reducing your strong land into proper tilth, during the operation of fallowing, a heavy roller filled with strong iron knobs or short spikes, would be a most useful implement. Its frame is surmounted by an old pair of cart wheels on a large axle. In carrying to the field, this implement is reversed, the roller in the air, and resting on the wheels. When acting in the field, the roller is turned down, and the wheels are in the air.

Immediately after gathering off all the root weeds that can he brought to the surface, plough again end-long, with a gathering furrow, which lays your land out of danger from wet weather. Then harrow and roll repeatedly; hand-picking as before, and carrying off the weeds.

Should this operation not have cleaned the land sufficiently, cleave down again the gathered ridges, harrow, roll, and pick as before: Then immediately gather up the lands again; harrow and roll and pick again, if there are still any roots to remove.

As a general and invariable rule, these operations are to be reiterated until every particle of couch and other root weeds has been picked out and carried off. The seed weeds, in the meantime, vegetate between the successive operations, and are destroyed.

During these various operations, sheep may occasionally be allowed to take a walk over the fallow, to pick up any vegetating weeds or grass roots that may come in their way. But on no account whatever, should any one of these fallow operations be delayed for a single hour, to give food to the sheep, under the grosly erroneous principle of turning the fallow land to profit. Far less should the fallow processes be put off, from week to week, and from month to month, that the sheep may be starved on the land in your abominable folds. Let the sheep manure be invariably given to the pasture lands; which will evince their gratitude for the benefit, when afterwards brought into tillage. The fallows must depend for their fertility on the stable and fold yard dung, and such other manures as can be procured, either from the farm or the neighbourhood.

When all these operations have been effectually performed, lead out the dung to the field, and let it be spread equally over the whole surface: Then give the last or seed ploughing, with a gathering furrow. Sow your seed, and harrow it in thoroughly; making the harrows begin their work end-long the ridges or lands, then across them, and finishing end-long. Then carefully open up all the water furrows and cross trenches, for carrying off the water in every part of the field. If these operations have been judiciously performed, it will be the fault of the soil or season if the husbandman is not amply repaid by an abundant crop.

You may, perhaps, be startled at the apparently great increase of expence, which these numerous fallowing opera-

tions must require. But, it will be only the first fallow off all, in your foul lands, that will require all this lengthened detail. Every future fallow will require them to be performed on a very reduced scale. Still, however, they must be performed so as effectually to clear the land, and reduce it to a proper tilth. Besides, when the mode of working, with one man and two horses to each plough, which shall afterwards be enforced, is taken into account, the apparent expence will be very much diminished, I should suppose to less then a half for each ploughing; and I am confident to less then the present expence, upon the whole operations of the farm. And, last, though not least in consideration, the additional expence, should it ultimately turn out to be so, will be more than compensated, by the encrease of produce under such management.

Besides, after a perfect fallow so conducted, the land will not require another fallowing for eight or even twelve years; instead of being fallowed, as it now is, every third or fourth year. Instead of the fallow, on land thus thoroughly cleaned, leguminous crops, such as drilled beans, or red clover, will be sufficient to keep the land in order; and, besides the profit, will occasion a vast encrease of manure to the farm, for the product of other profitable crops.

Rrr.

LETTER IV.

Strictures on Farm-Management near London.

August 1799.

I would strongly recommend, that all your ridges or lands should be formed into regular streight-lined oblong beds; and I shall endeavour to explain, as distinctly as possible, the manner in which that operation is conducted in this country, assuming fifteen feet as the proper width, though some farmers prefer eighteen.

After the cross ploughed land has been effectually cleaned, by its harrowings, rollings and pickings, when your land is in a level or flat state, or nearly so, the best ploughman on the farm takes three or more poles, according to the length of the field, of seven feet and a half each in length. Measuring off from a straight lined hedge, in the direction you wish

to lay the ridges, he takes one length of the poles for the half or crown of the first ridge, and allows two feet or so of a grassy balk, or slip, at the hedge side, which cannot be ploughed. All his poles being thus set upright in a straight line from end to end of the field, and in the middle of the first ridge to be ploughed, he begins his first plit in the line of the poles, taking care to keep all the poles and the head of his plough constantly in a straight line between his horses, and plough them all down. While proceeding with this first plit, he regularly sets up each pole again as he comes to it, measuring off two lengths, or fifteen feet, for the crown of the next ridge; so that, when at the end of his first plit, all his poles are up again in a straight line, for the same operation of the second ridge.

Having finished the first plit of the first ridge, he turns his plough back upon his first track, and draws a second plit close upon the first, and thus completes the crown of the first ridge. He then proceeds with his plough to the line of poles, and forms the crown of the second ridge in the same manner; and goes on in that way over the whole field.

The other ploughmen follow him, to gather up each ridge in which they cannot well get out of the line he has marked out for them. In the next place, after all the end-long ridges have been formed, the principal ploughman, with the assistance of his poles as before, forms the crowns of the head and foot lands or ridges, which are gathered up in the same manner as the others. He next draws the water furrows, either by two bouts of a common plough with one mould board, or by one bout of a double mould-board plough for each. Should there happen to be any dishes or hollows in the field, across the line of the ridges, a water furrow must be judiciously drawn through there, in such a manner as to carry the water off effectually. Finally, a labourer follows with a spade, clears all the intersections fairly out, and cuts cross-trenches where necessary, to let the water out of the water furrows into the fence ditches or drains. Then, and not till then, the field may be considered as in a state of perfect safety. It is scarcely necessary to observe that these last operations, for clearing out all the water furrows, must be most carefully performed again, after the field is sown and harrowed out.

It will readily occur to you, that these directions can only be followed out, exactly as I have here given them, in a

regular oblong field, with straight lined fences.—Where any of the fences are crooked, the side, or head, or foot ridge along such fences, must necessarily take the same curvature.

Where one end of the field is wider than the other, the straight ridges must necessarily be more numerous at the wider end, and their tails must be drawn out into a wedge form: Such ridges we term *butts*; they might be named gusset ridges.

When any of the fences in a field are very irregular, I would recommend to draw new ridges at a small distance from these, in straight lines, filling up the intervals between the old and new fences with coppice wood or other planting.

Perhaps, on your strong retentive soil, the narrow ridgelets, or *stitches*, as I think they are called, which are used in Hertfordshire and Middlesex, might answer better, for wheat and barley, than the fifeteen feet ridges which I have described. At all events, these must be as effectually laid dry, by carefully opening the water furrows, and judiciously forming cross trenches, as in the other plan of laying down the field. And, when the fields laid down in this manner are in grass, these must be carefully cleared out, at least every spring and before winter; as grass is as liable to injury, from stagnant water, as any other crop. For oats, the land certainly does not require to be laid so high, as for other grain; but stagnation of water is in every case to be most carefully guarded against. I am, *&c.*

FOR THE FARMER'S MAGAZINE.

Estimate of the Quantity of BREAD CORN *required yearly to maintain the Inhabitants of* GREAT BRITAIN, *supposing the number to be* 10,000,000.

ALTHOUGH any calculation on this subject must be liable to much uncertainty, for want of data on many points from which to estimate; yet as some facts are already known, one may, from probable conjecture, approximate some what near to truth, with regard to others, and the general result of the whole.

The quantity of *bread* produced from a given quantity of *grain*, is known almost to precision, and this knowledge will

be of some use in the present investigation. Thus, in grain of a medium quality, a bushel of

	lbs.		*lbs.*		*lbs.*
Wheat, weighs	60	produces of flour,	48	and of bread,	64
Barley, ditto	48	ditto of meal,	37½	ditto	50
Rye, ditto	54	ditto	42	ditto	56
Oats, ditto	40	ditto	22⅓	ditto	30
Peas, ditto	60	ditto	51	ditto	68

Could the quantity of bread one uses daily be also known, it would much facilitate this enquiry. This, however, has not been altogether ascertained; but in one case it has long been known, and from it a probable conjecture may be formed of the rest, and it is this: In Scotland, I believe all over, a labouring man is allowed 2 pecks of oat-meal weekly for his food, amounting in weight to 17½ lbs. averdupois, and this in addition to the beer, the milk, or the broth, which he gets along with it. This meal will produce 23⅓ lbs. of bread, which is at the rate of 3⅓ lbs daily, or 53⅓ ounces. When he is fed on wheaten bread, he gets 3 loaves a day, at from 14 oz. to 22 oz. weight each; for in this the practice is not uniform but more generally 16 oz. than any, which makes 48 oz. daily. Such is the allowance to each reaper in harvest, and such is the quantity which a servant boarded in the master's house receives the whole year over; but when each labourer lives in his own house, with his wife and family around him, there is no doubt that he makes a quantity considerably less to serve, and which should be held in view, when forming an estimate of what the whole community at an average may consume yearly, supposing in this stage of the estimate, that all are fed on bread alone. It will be necessary, also, to make a distinction between the different classes, as composed of youth, able bodied, and superannuated, and even men from women, as these last are generally supported on a less mess. Having all this in view, I would conjecture, that all males, between the years of 10 and 50, would require 42 oz. daily, the females of the same age 35 oz., and all of both sexes below 10 and above 50, 28 oz. each.

Now, from the Statistical Account of Scotland, lately published, it appears that, in the whole community, the proportion in 1264 souls, is as under:

Males between 10 and 50	352 say at	42 oz. ea., hence	14784
Females ditto	404 do. at	35 ditto	14140
Both sexes below 10 & above 50	508	28 ditto	14224
Average of	1264	will hence be	1264(43148)34.136

But this allowance of 34.136 oz. daily of bread to each individual at an average, is made on the supposition, that the whole live upon bread alone, which is not by any means to be granted; for animal food was always to some extent, and now in a considerable proportion forms, a part of the food of the people. How much this may operate towards a reduction in the use of bread, I have no particular data from which to estimate, but merely from conjecture, which to me seems probable. I should suppose that two thirds of the people eat animal food daily, and that, in consequence thereof, they make use of only *one half* of the bread which otherways must have been required for their subsistence; but that the remaining third part of the people depend almost solely upon bread, without receiving much of their subsistence from animal food at all: Hence, on this principle of calculation, one third of the above allowance of 34.136 ounces, will fall to be deducted in estimating the average of bread made use of by the whole body of the people, making 22.75 oz. daily to each individual.

Now, if one person uses daily 22.75. oz.
10,000,000 will use 227,500,000, ozs.

	tons.	*cwts.*	*lbs.*	
which is equal to	6347	13	14	in a day
or to	44,433	11	98	in a week
or	2,316,894	10	70	in a year.

The above includes flour and meal from every description of corn used in the country. With regard to wheat, of which there is assuredly more used in the food of the people, than of any other species of grain, the quantity can per-

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* It is a curious fact, that the proportion between males and females *born*, is just the reverse of this, there being 35 males born for 31 females; whereas the proportion in actual existence as above, is 40 females to 35 males; hence, it should appear, that about 10 out of 45 males born, either leave the country, perish in battle, or are lost by shipwreck. Some few females also leave the country, or are lost by shipwreck, which will make the proportion still greater of males who disappear from the population.

haps be ascertained nearly to precision. Thus, the City of Edinburgh and country for 6 miles round is known, from actual survey, to contain about 110,000 inhabitants, and to use yearly about 165,000 * bolls, or 82,500 quarters of wheat; which is at the rate of 6 bushels for each person yearly; a quantity, I should suppose, that may be stated with a considerable degree of accuracy, as the average individual consumpt of the whole nation at large; for although in Edinburgh itself, there is a considerable quantity of oatmeal used, and in a great proportion of Scotland, and a considerable extent in the west of England, and in Wales, the people live more upon oatmeal than wheat, yet as the great body of the English nation live altogether on wheaten bread, the estimate of 6 bushels yearly to each person, at an average all over Great Britain, seems probable to be neither a too great nor a too small an allowance.

Now 6 bushels is equal to 360 lb. of wheat; 288 lb. of flour, and 384 lb. of bread, which is at the rate of 16. 8 ounces of bread daily to each individual, at an average. Then, if one person uses this in a day

		tons.	*cwt.*	*lbs.*	
10,000,000 will use	10,520,584 lbs.	4696	13	52	in a day
		32,876	14	28	in a week
		1,714,285	14	52	in a year
which is of flour		1,285,714	5	95	
and of wheat		1,607,142	17	16	

which, at 60 lb. the bushel, comes to 7,500,000 quarters.

Again, if we suppose, that, in a season of medium fertility, an acre (English,) affords for *bread*, exclusive of the *seed*, 20 bushels; then, to produce the above, would require 3,000,000 of acres, and if crop 1799, confessed on all hands *now* to have been a bad one, had been deficient to the extent only of 5 bushels the acre, hence the failure on 3,000,000 of acres, would amount to 1,875,000 quarters, a quantity sufficient to have loaded the whole Royal Navy of Great Britain at present in commission, although divested of its guns, and having no more hands on board than sufficient to navigate the vessels.

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* The Corporation of Bakers in the Royalty of Edinburgh use yearly about 55,000 bolls of wheat, and these are on good grounds supposed to take *one third* part of all the wheaten bread in the city and above district.

It was before calculated, that the whole bread of every description used in Britain yearly, amounted to 2,316,894 tons 10 cwt. 70 lbs; from this deduct the weight of wheat bread, as above, and the remainder, 602,608 tons, 16 cwt. 18 lbs. will be the quantity of bread made from other kinds of grain, such as oats, barley, &c.

It will not be easy to ascertain the exact proportion that these different species of corn bear to each other in the above quantity of bread, but I should think that it will not be far from the mark, to estimate them in the following proportions in 10; viz. oats 6; rye 2; barley 1; and peas 1. Now, as stated page 132, the respective weights of each will be as under:

			lbs.
6 Bushels of oats at	30 lb.	of bread each, will be	180
2 do. of rye at	56	do.	112
1 do. barley at	50	do.	50
1 do. peas at	68	do.	68
10 in all, will average each			41.0

Now, if 41 lb. be accounted as equal to the bread from one bushel, the before stated quantity, viz. 602,608 tons 16 cwt. 18 lbs. will be equal to the bread of 32,923,010 bushels, or 4,115,376 quarters.

The next point to be ascertained, and it would be very desireable that it could be done with precision, is, How many bushels from each acre in cultivation, on the average of these last mentioned crops, are converted into bread? It must be obvious, that it can be but very few, as *malt* consumes almost the whole barley, and *horses* the whole beans, and a great proportion of the oats. I must here conjecture, in a great measure at random, and from a very limited knowledge of the fact, that each of these acres produces for bread, in a season of medium fertility, only one fourth part of the quantity that is thus produced from an acre in wheat, or 5 bushels in all; from thence the number of acres altogether thus cultivated will be 6, 584,602. *

* To this add 3,000,000 in wheat, as before estimated, makes 9,584,602 acres altogether in Great Britain under bread-corn. It is generally supposed, that in England alone there are 2,000,000 of acres yearly in bare fallow, besides what is in turnip, potatoes, artificial grases; and various other vegetables. Probably the whole lands cultivated by the plough, may amount in Great Britain to 15,000,000 of acres.

The

But crop 1799, after *pinching greatly* the brewer of his *malt*, the horses of their *feed*, and even the land itself of its *seed corn*, would not be able to spare above 2 bushels each acre of these crops for bread to the people, and thus would arise a defection from the usual means of subsistence, to the extent of 2,469,225 quarters, which, added to the deficiency in the wheat crop already noticed, makes the whole amount to 4,344,225 quarters of grain of every description in use, to be converted into bread, besides the deficiency in the usual supply towards malt, horse-corn, starch, &c.

How the nation should have been able to exist at all under such a deficiency in the crop (which moderately estimated, as I conceive it to be in detail, yet *collectively* becomes immense) should now be attempted to be accounted for: And it can be accounted for, from three distinct, but co-operative causes:—1st. The crop itself was *late* of being got in, and from the impression general among the country people, of its being very defective, (in spite of all that the Newspaper-men did to persuade them to the contrary,) they did not begin to make soon use of it, after it was got in, insomuch that it was near to the beginning of November, before they began to thrash it out; while happily for the country in general, there was a sufficiency of old grain in hand, (partly imported from abroad) to subsist on till that time; and, in aid to all this, the next crop 1800 was begun to very keenly, by the middle of August all over the island, and in many places 10 days sooner. The saving by this alone, if only estimated at 2½ months provision, (making crop 1799 serve only 9½ instead of 12 months, (will be 2,419870 quarters. 2d. There was, from the pressure of the *dearth*, much *economy* in the use of bread by all ranks of people. If we estimate this saving to be only at the rate of 2 oz. a day of bread by each person, it will amount to the astonishing quantity of 1,056,132 quarters in a year; and there was, besides, a saving

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The whole surface has been calculated as under:

	Sq. Miles.	*Acres.*	*Low Country capable of Cultivation.*	*Hills and Mountains incapable of Cultivation*
England and Wales,	55,924	35,791,360	28,633,085	7,158,275
Scotland,	30,600	19,584,000	6,266,880	13,317,120
Total,	86,524	55,375,360	34,899,965	20,475,395

by *public kitchens*, and other substitutes for grain. 3d. There was a very considerable *importation of foreign grain*, to the extent of not less, in all kinds, than 2,000,000 of quarters. All this will sufficiently account for the subsistence of the people hitherto, notwithstanding of the very defective crop 1799, and even will in some measure carry us on during the expenditure of crop 1800, itself greatly short of an average, besides having to supply, from its early consumption, a considerable length of time which the former crop left unprovided for.

It has been already stated, p. 134, that the quantity of wheat converted into bread in a year of medium fertility, (in which I also understand that the nation affords its own supply of corn,) amounts to 7,500,000 quarters.

And of every other description of grain. 4,115,376 qrs.

Total required for bread, 11,615,376 qrs.

But this is neither all sent to market, nor is it all that the country produces; for, in the first place, there is included in it, all that the farmers themselves and their whole body of labourers, (a very numerous class) require at home for their own subsistence, and which does not go to market at all; also, the crop has other exigencies to provide for than merely bread-corn. There is indispensibly required *seed* for the following crop; *corn to feed the horses who labour the land*; corn to feed the horses *in every other department*, and, what is perhaps more than any, *malt* for the brewery; for man cannot live by bread alone, no more than without it altogether. What all those different departments may require, I shall now endeavour to estimate in detail, so far as I have *data* for the different cases; also the gross amount of the crop itself in a season of medium fertility.

First, however, with respect to the amount of the crop, —which I must estimate from probable conjecture only, for precise data is altogether wanting,—I should suppose that wheat, rye, beans, and pease, (all corn with little husk) will return per English acre 22½ bushels; barley and oats, both coarser grain, 28. It has already been stated, that 3,000,000 of acres are required to be in wheat, and 6,584,602 acres in grain of all other kind: Then suppose ¼ of these to be in rye beans, or pease, equal to 1,646,150, hence 4,646,150 acres,

producin g22¼ bushels each, and the remainder 4,938,452,— producing 28 bushels the acre.

Next, (and these particulars I state as in a great measure consistent with my knowledge,) for every acre under a crop of corn, there will be required 3¼ bushels for bread to the farmer and his labourers; for seed 4 bushels, and for horse-corn 2¼ bushels, making 10 bushels in all, for what may be called *home consumpt* on the farm, and this, whether the crop be good, bad, or indifferent.

This being premised, let us suppose a year of medium fertility, such as 1798, the produce and expenditure, therefore, of the crop, would be as under:

		Quarters
4,646,150	Acres of wheat, rye, &c. at 22¼ bushels per acre, - -	13,067,297
4,938,452	do. of barley and oats, at 28 bushels per acre, - - -	17,284,582
9,584,602	Acres of land in bread-corn producing in all - - -	30,351,879

Disposed of as under:

1st. for seed to the next crop,		4,792,301	
2d. bread to the people,	employed in	4,193,263	
3d corn to the horses,	husbandry	2,995,184	
Deduct total home-consumpt			11,980,748
Remains for market,			18,371,131

which is at the rate of 15. 333 bushels from each acre.

It was before seen that the quantity required by the whole

	Quarters.
nation for bread, was,	11,615,378
Deduct what is required by the husbandmen, as above, *	4,193,293
Remains for bread to the rest of the community	7,422,113

* Under this description is included, not merely the farmers and their permanent labourers, but also the occasional work-people in hay time, harvest, &c. A numerous body, and supported in these times on a very high rate of board.

From the quantity sent to market as before, viz. 18,371,131
Take the quantity as above required for bread, 7,422,113

Remains for the brewery, the distillery, starch, and corn for the horses not employed in husbandry, - 10,949,018

Again, suppose a year of scarcity, such as crop 1799, in which the return was at least *one fourth* less than a medium crop, hence the produce and disposal of it will be as under:

	Bushels.	*Quarters.*
4,646,150 acres of wheat, &c. at	16.175 per acre	9,800,597
4,938,452 do. of barley & oats at	21. do.	12,963,236
Total produce,		22,763,833
Deduct home-consumpt as before,		11,980,748
Remains for the market,		10,783,085

which is at the rate of 9 bushels the acre only.

Lastly, suppose a season of great fertility, such as the ever memorable year 1779, when the crop was *one fourth* ABOVE a medium crop, and on which the farmers got all rich, although they sold their wheat at from 30s. to 40s. the quarter, and every thing else equally low,—The produce and expenditure of such a crop would be thus:

	B. pr. acre.	*Quarters.*
4,646,150 acres of wheat, &c. at	28.125	16,334,121
4,938,452 do. barley and oats at	35.	21,605,727
Total produce,		37,939,848
Deduct home-consumpt, as before,		11,980,748
Remains for market,		25,959,100

which is at the rate of 21.666 per acre.

To conclude, although the precise quantities specified in the whole of this estimate, may be considerably different from the real fact, yet the principle on which it is conducted will remain unshaken, particularly that which relates to the disposal of the crop, in which it is indispensible that a precise quantity (not a proportion) of the grain produced, must be retained in the cultivators own hands, without going to market at all; and this quantity bearing a great proportion to the

whole in a year of medium fertility, preponderates greatly against the market in a year of scarcity, and is only lightly felt in a season of abundance, in which the husbandman, having a vast *proportion* more of his crop to dispose of, not only can afford to sell it at a much less price, but actually gains more to himself. Thus, how much better must it have been for him to sell 21½ bushels from the acre in 1779 at the then moderate prices, than to sell 9 bushels only from the defective crop 1799, with all the advance in the price; for, on comparing the price of any thing now, to what it was 20 years ago, regard should always be had to this, that the *value of money* is fallen, and that in no mean degree, not going above one half the length in purchasing any one article almost, but particularly *labour* and *rent of land*, that it did only 20 years back; when, although the peck of oatmeal was to be had from 9d. to 1s. the day-labourer had only from 9d. to 1s a day to provide himself in every thing too; whereas his wages have now advanced to double these rates, and land to double the rent, not in consequence of the present *dearth*, as some people have a visionary notion; but, previous to the period when scarcity occasioned it; viz. in 1797 and 1798, when the oatmeal was as low as 9d. the peck, and the quartern loaf, at 7d. while the highest rented land at present in the country was then taken, at the blessed rent of 2 bolls of wheat, 2 bolls of barley, and half a boll of oats the acre, on a 40 years lease*. In fact, high prices of provisions have a tendency to lower the price of labour, however unhappy a predicament it may be to the labourers themselves, from the necessity they are under of application; and high rents have a tendency to lower the price of provisions, from the necessity of exertion the husbandman is put to, as well as from his inability to hoard. I know, indeed, that there is a very general notion to the contrary on both these points; but I believe also, that farmers and labourers, like to the rest of all mankind, dispose of their commodities or their talents, at all times, not for what they *can afford*, but just for what they *can get*. The workman with ten helpless children to maintain, getting no more for his labour than he who has none, and the farmer who pays 10l. the acre of rent, getting no more for his corn than his neighbour, who only pays 10s.

Mid-Lothian, February 1801. *H.*

* Which, for crop 1800, amounts to about 13l. Sterling the Scots acre, or 12l. 8s. the English.

FOR THE FARMER'S MAGAZINE.

Abstract of the System of Agriculture pursued in his MAJESTY'S FARMS, *with Remarks continued from last number, by a correspondent.*

I MEAN now to give an abstract of the System of Agriculture pursued in what is called the *Flemish farm.* This farm consists of four hundred acres of good loamy soil, one hundred and sixty acres only of which are kept under the plough; the rest being probably in perennial meadow, although the employment of that large remainder is altogether omitted by Mr Kent. The arated part is divided into four portions of forty acres each, and is managed under a course or rotation of four years. First year, wheat: Second year, cabbage or clover: Third year, oats: Fourth year, beans.

As in the account of the Norfolk farm, we are not informed which crop gets manure, nor whether the beans are sown in drills and hoed, or sown breadcast and left to weeds and nature. The tops of the beans are taken off, just after the blossom sets: This is an excellent practice, especially in wet seasons; and I have known it done in Berwickshire, by means of a scythe set in a straight handle. Half of the wheat crop is sown with clover, as a crop for the second year; the other half is winter and spring fallowed, and planted with cabbages.

The kind of cabbage cultivated, is the *drumhead.* The seed is sown in August: The plants are set out in beds in November; and transplanted into the field in July. Mr Kent takes no notice either of the manner of planting, or the culture they receive. It may not be amiss to say, that, where cabbages are proposed to be cultivated in the field, they ought to be planted in regular rows, two and a half to three feet distance, so as to admit the horse hoe; and that, like turnips, they should likewise be carefully hand-hoed. After this crop, I should consider barley would thrive excellently, and would be more profitable than oats.

Although not personally conversant with the management of such soil as compose this farm, which Mr Kent describes in one part of his report as good loam, and in another as strong and heavy, I shall venture to propose a very different plan of procedure, founded on my observation of the management of superior agriculturalists in Scotland, on such lands.

Abolishing the perennial meadow, the whole four hundred acres should be divided into sixteen fields of twenty-five acres each: Supposing two of these taken up from grass, as a portion or eighth part of the whole, the course or rotation would be as follows: Firt year, oats: Second, a perfect fallow: Third, wheat: Fourth, beans in drills: Fifth, barley, sown with mixed grass seeds as formerly proposed for the Norfolk farm: The three succeeding years in grass, and so round again as before.

The fallow portion ought to have a complete dressing of of lime, as directed for the Norfolk farm. Part of the portion allotted for beans in the above plan may be planted with cabbages; and part sown with vetches, for the work horses.

Not being informed what portion of the stock belonging to these farms are pastured in the park, it is impossible to form any accurate estimate of their total produce annually. Leaving that circumstance out of consideration, for want of *data*, the following may be taken fairly as the probable produce from the two farms, under the proposed plans for their cultivation.

Wheat,	4,400	Bushels.
Barley,	6,200	
Beans,	1,800	
Oats,	12,000	
Total,	24,400	

Mr Kent estimates 3360 bushels of wheat and rye, which latter is not taken into the proposed system; and 5000 bushels of oats and beans. It is not necessary to mention the difference, being sufficiently obvious.

Mr Kent mentions, that forty oxen are fatted off annually, and eight hundred sheep bred. I will engage on these farms to fatten off every winter from eighty to an hundred oxen, and five hundred sheep; and to feed off every summer at least five hundred lambs, and three hundred ewes. Upon the whole, so far as it is possible to estimate the value of land unseen, had I a capital enough for so great an undertakling, I would not besitate to give a rent of four thousand guineas, for a thirty years lease of his Majesty's two farms, including the privilege of pasturing sheep and oxen and

young horses in the park, and supposing the farmer to have no parish or county rates to pay.

Mr Kent strongly insinuates the vast superiority of oxen over horses, as farm work cattle. The comparison contained in the fourth number of your Magazine, may suffice as a complete reputation of that idea. Under the plan I have proposed, thirty pair of horses would be necessary for the two farms: and, as the Northumberland Survey reviewed in your last number, clearly shews that a team of six oxen costs at least 8l. annually more than a pair of horses, thirty such teams of oxen would occasion a loss of 240l. It is also shown, that such an ox-team requires ten acres more for its maintenance, than a pair of horses; by which it is plain that thirty such teams would occasion the waste nearly of three hundred acres of land.

I must, however, remark, that the estimate given in the Northumberland Survey, is by far too low rated. The real loss on such an ox-team cannot be less than 25l. or 30l., consequently on such an extensive farm as the King's, the annual loss would amount to a prodigious sum, independeut of the land wasted in supporting the animals.

I make no remark on the folding of sheep, which is largely practised in the king's farms, because I do not pretend to any accurate knowledge of folding; though, so far as I have had access to learn concerning it, I am very far from approving the practice.

There certainly can only be one opinion respecting the short notice given by Mr Kent, respecting the King's mill for suppying the labourers with bread meal at first cost. It is highly benevolent, and is most judicious charity: Let all landlords, instead of compelling their unleased tenantry to sell below market-price, which is downright tyranny, go and do likewise.

I have seen a farther report from Mr Kent, respecting the King's flock of fine-wooled Spanish sheep; which he has graciously directed to be sold at moderate prices, to those who are willing to try the breed. I am sorry that, not having this by me, I am unable to give you any particulars of that patriotic arrangement.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Receipts for destroying the Gooseberry Caterpillar.

GENTLEMEN,

In compliance with the request of your Aberdeenshire correspondent W. C. I send you the following receipt for destroying the gooseberry-caterpillar.

Take one Scots pint (two English quarts) of tobacco liquor, and mix it with an ounce of alumn; when this is dissolved, dip a brush in the liquor, and, as soon as the caterpillar begins to appear, hold up the branches so as to expose the under side of the leaves, and draw your hand gently over the hairs of the brush, by which a small shower of the liquor will be thrown upon the back of the leaves, where the caterpillars generally rest, which will effectually destroy the eggs, and the caterpillars will die in a few minutes.

N. B. The above receipt obtained a premium of Ten Guineas from the Highland Society, *after due examination*; for this reason alone I have sent it you: It is recorded in the first Vol. of their transactions, and is introduced with much irony by the Editors of the London Monthly Magazine, by way of extract, in the midst of their *philosophical intelligence*.

The following contrivance of Colonel Johnes of Hafod in Cardiganshire, has, I am informed, been successfully practised by his gardener in destroying the gooseberry-caterpillar. Quick lime being carefully strewed under the bush, it is then covered close by a cone made of coarse painted tarpalin, extended upon three or four wooden hoops; a common fumigating bellows, containing tobacco and sulphur in equal quantities, is introduced through a hole at the bottom of the cone, when a few moments are sufficient to suffocate all the caterpillars, who are completely destroyed by falling on the hot lime. It will be necessary to caution your correspondent, not to let the bush remain too long under the fumigation, as I once saw a gooseberry tree killed entirely by remaining too long in the fumes of sulphur.

In addition to the valuable communication of your correspondent A. S. on the *storing of winter apples*, I beg leave to subjoin the following remark: viz. That in the south, fern is reckoned preferable to straw for packing, as it never gives the apples a musty taste, which straw is very apt to do.

P. H.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

GENTLEMEN,

SEVERAL of your correspondents have ably treated the important question of the advantages and disadvantages of *fallows*. It is evident, however, that they are marshalled in two parties, the one probably made up from *clay land farmers*, or those who have cantracted clay land notions; and the other the reverse,—so as not to discuss the point with impartiality. It seems to me to be necessary to put the question differently from what they have done; as thus, Whether fallows are upon certain soils an necessary part of the course, or if only incidental, that passing years may or may not require. My notions upon the case thus stated, are, That as all soils by their own nature demand a continued constancy in crop, (in which the public and private interests concurring,) the rotation of every farm ought to be governed by that supreme law, and no more have a fallow in prospect than a year of absolute sterility, which, were they general over the kingdom, would really be the case. This is one point decidedly against the clay land farmer, who considers a fallow unavoidable in a given time, and on that account is more patiently tolerant than becomes him, of the gradual propagation of weeds.

That the necessity of this practice may be warded of for a length of years, is evident to me from the number of expedients found in the new husbandry which may be substituted in its stead; winter and spring tares are off the ground in good time, to admit of a bastard fallow preparatory to that year's wheat. Spring and summer cabbages succeed, oats follow, and drilled beans, concluded by barley, grass seeds, hay and pasture.

No practice, however, tends more powerfully to the extirpating of fallow, and the weeds which gives its rise, than the drilling of all white corns without exception, which, if executed at wide intervals, to admit the horse-hoeing plough, and that plough effectually used to moulder, clean, and earth up the crop, would prove an absolute panaccæ to the evils attending the clay lands. No season, however rude, could batter their surface in opposition to the crumbling of its work, no weed appear but to be ploughed down, and the teeding of the roots would infallibly load the ground with an unusually burdensome crop.

All, therefore, I am disposed to yield to Mr Clayland, is this; that as the soil is pregnant with evil as well as good, bare fallow cannot be blotted out of the farmer's callendar, as an extraordinary part of the regimen of the farm. While slovenly farmers exist, and untoward seasons come to pass, and worse than all, while removing tenants, by a foolish scourging, bring upon their successors this foul disease: In God's name, then, purge and salivate, by the mercurial course of fallow, but do not adopt it as a part of the ordinary bill of fare, necessary at a stated revolution to the vigour and fertility of the farm*.

SCOTUS.

Berwickshire,
Nov. 1800.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Thoughts on various branches of Rural Economy.

GENTLEMEN, *February 4th* 1801.

IN the Yorkshire Quarterly Report, dated the 7th ult., your correspondent gives you the following information; "The fallows for turnips have, as usual, received their first ploughing; what are called summer fallows, are here generally deferred till after spring seed-time, when the strong soils turn up dry and broken:" Whether or not this be good husbandry in the main, I leave to better judges.—To know the proper time to plough fallows, is certainly of much consequence. In this part of the kingdom, there are several advocates for the times mentioned above, while others (I think the greatest number) prefer November and December for all descriptions of fallow. As I do not recollect having seen much in your useful miscellany upon this subject, I shall be glad to have your opinion, or that of some of your readers of experience. For my own part, I have frequently observed, that if strong fallows do not receive their

* Though we have from motives of impartiality, given a place to the above letter, yet we are bound in duty to state, that the sentiments of the author are decidedly contradicted by the result of every trial we have made to ascertain whether summer fallow could be dispensed with upon heavy soils. If a proper rotation of crops is adopted, we dont question but that the necessity of bare-fallow may be lessened. To lay it aside altogether upon clay lands, would however be attended with the greatest mischief. N.

first ploughing till April or May, and if the succeeding summer does not bring a good deal of rain, they can but seldom, even at a considerable additional expence, be sufficiently reduced before seed time; and that, if they are ploughed in November or December, the rains, snow, and frost, make them pulverize easily, provided the second ploughing is given in April following. The third, I think, should be given in June, or early in July. When the first is not given til April, either they do not receive ploughings enough, or gelt them at too short an interval, and when the utmost is done that the time will allow, still the land is generally too cloddy. In my opinion, (but I give it with diffidence, and a wish to be favoured with that of others more able to judge), clods are injurious in several respects. They cannot be sufficiently enriched by the manure and fallowing, and frequently contain in their bosoms the roots and seeds of pernicious weeds, besides preventing the seed from being laid at a proper depth; what this should be, depends, probably, on that of the soil, and the nature of the sub-soil; but it appears to me to require considerable attention. Wheat appears to have two roots, the one is called the seminal, and the other, the coronal root: The *first*, I have heard, grows with the germ in autumn, and, with the farina, supports the plant till the spring; at which time the coronal root forms just within the surface, and puts out stalks, upon the number and strength of which the goodness of the crop will principally depend. They will, however, not be sufficient, if the seed and seminal root are not deep enough to be secured against the inclemency of the weather in winter, and if the soil is not pulverized so as to allow the tender fibres a free passage in search of food. Part of this food is, I conceive, (especially where the land has been manured with judgment) received from the air, rains and dews, more beneficially, by soils which have been ploughed before winter, and which are well pulverized, than by those which are bound in large clods. Some farmers assert, that it is frequently advantageous to have a good many clods upon fallow-wheat, especially when the land has not been long in tillage, or is not strong. I am not an advocate for having land long in tillage, nor for having any, but very strong land, summer-fallowed; neither am I convinced, that it is necessary, in every kind of season, and in every case, to summer-fallow even land of this description. But I am decidedly of opinion, that to summer-fallow turnip soils, is extremely injurious to the occupier and to the community. Good loams,

light soils, and such as have but a very small mixture of clay, and are dry, will, if kept fresh by an alternation of tillage and grass, produce turnips worth three to six pounds an acre, and more wheat, barley, and oats after them, than if kept all the summer in naked fallow. They will also grow clover and grass better. This management, therefore, brings food for a much larger stock, which, by encreasing the quantity of manure, will at the same time encrease the succeeding crops. Throughout it clearly shews, that the farmer, who pursues it, has rationally built his hopes of encreasing the quantity of his most fertilizing article, on a solid foundation. In many parts of this kingdom, as well as in Yorkshire, too much land is, I apprehend, summer-fallowed, which, from the nature of its soil, is capable of growing great crops of turnips. For this, the farmers are sometimes culpable, but, in general, I believe, it is owing to another cause; namely, restrictive covenants, inserted by agents who draw the agreement by forms approved in the early days of their great grandfathers. I am very far from imputing to these gentlemen any wilful deviation from what they know to be right. God knows, the estimate I have found of their sapience and agricultural abilities, acquits them of that charge. But, as the cultivation of the earth involves the most important interests of society, I must sincerely hope, that land-owners, finding that much more is necessary than merely to be able to write and keep an account, will soon attend most particularly to the qualifications of their agents. In consequence of the covenants I have pointed out, the grass land has been kept in grass, and the tillage land in tillage, from generation to generation. In this case, turnips cannot be expected, however favourable the soil may naturally be. Perhaps, to break up all those pastures which are fit for grazing large cattle, would, in some parts of the country, be wrong; but all other pastures should give way to the plough. Much more *corn*, *beef*, and *mutton* would then be brought to market, and a prospect opened of being able to raise food enough for our own consumption. To rely, for part of this, upon foreigners, whose policy may sometimes induce them to starve us, is hurtful and dangerous in the extreme: It is disgraceful, if we can supply ourselves. Whether we can, or not, is uncertain; but I am inclined to entertain an opinion, that we can. If the best system of husbandry and good management, were adopted in every part of Great Britian and Ireland; if a general Inclosure Bill, to facilitate the improvement of common and waste lands, was pas-

sed; and if the farmers, in many parts of England, would lessen their consumption, by yoking only two instead of four or five horses in their ploughs and carts, an additional quantity of food might, I think, be brought to market, much greater than that we have imported on an average of the last seven years, and fully equal to the supply of our encreased population. It was last year stated in the House of Lords, that, under proper management, Great Britain and Ireland might soon raise food sufficient for the consumption of twenty millions of inhabitants. How much this exceeds the present population, I cannot say; but if it is an encrease of no more than four to five millions, I am induced to support the opinion of the Noble Lord who made the statement. A full population, fed by the produce of domestic agriculture, would bring an accession of real power, and lay a still broader foundation for an encrease of wealth. What I have stated as to supplying ourselves, will not, I hope, appear improbable, when it is considered, that the average I have mentioned, of wheat and flour, is not more than about 500,000 quarters, and that, in the period I have taken, we have had three unfavourable seasons, and two in succession, worse than any other in the memory of any man living: The crops were consequently much below the average-produce, not only in this country, but also abroad, and this, I believe, is the sole cause of the present high prices of grain. War, monopoly, and forestalling, had pretty much the same chance to prevail, a few years ago, that they have now, yet corn was then at a moderate, or a low price, because it was plentiful, and plentiful because the seasons were favourable. Notwithstanding the great number of men employed in the army and navy, there has been no want of hands in agriculture. Now, as our gallant defenders belong to us in peace as well as in war, and although they may consume more animal food in the one case, than when differently employed in the other, (which bye the bye leaves more vegetable food for the lower classes) as I cannot conceive that they *eat* any more, *upon the whole*, I do not believe that the war has raised the price of corn. The waste so much spoke of, is, perhaps, more than counterbalanced by the great number of provision ships which the superiority of our navy enables us to bring into our ports, which would otherwise go to those of our enemies, and which, in time of peace, we would have no right to capture. The state to which the unequalled exploits of our navy has reduced the shipping, merchants, and credit of our enemies, has no

doubt enabled us to appear in the great corn markets abroad, against a more feeble competition than would have appeared in time of peace, which may counteract the additional freight and insurance. With regard to what has been so generally and so loudly said, as to the circulating medium, taxes, &c. having encreased the difficulties of the lower orders, I beg leave to refuse my assent to the position. Dr Adam Smith has informed us, that grain was not so high in the last century, (upon the average) as in that immediately preceding. Now, if this be true, and if we, at the same time, give credit to what that great man says, as to an encrease in the price of labour having taken place in the last century, and to the additional price of soap, candles, salt, and leather, being counterbalanced by the additional quantities and lower prices of potatoes, turnips, cabbages, and coarse cloth, how can it be made appear, that the condition of the people in question has become worse? A few facts are worth a thousand arguments, and I believe it can be made appear, from well authenticated records, that the average-price of corn was higher, and that of labour much lower, in the seventeenth, than in the last century; and that in the former, scarcity occurred, in consequence of unfavourable seasons, in which the lower ranks were in a much more deplorable state, than that to which, from the same cause, they are now unfortunately reduced. Those who view the encrease of wages with such gloomy apprehensions, I beg leave to refer to what the celebrated author on the Wealth of Nations says upon the subject: 'The liberal reward of labour, therefore, as it is the effect of encreasing wealth, is also the cause of encreasing population. To complain of it, is to lament over the necessary effect and cause, of the greatest public prosperity.' I am no friend to war, but I am a friend to my country, and, in times of such danger and perturbation as the present, consider every thing that tends to raise discontent, by inducing the people to believe the war to be the cause of their present distress, as highly detrimental to the dearest interests of this kingdom, and favourable to the views of our enemies. If next seed time be as favourable as that with which we were blessed last autumn, I hope we will soon have a bright prospect of plenty. Indeed, I have no doubt of the next crop being so great, if the seasons are favourable, that, notwithstanding war, the circulating medium, monopoly, large farms, and the many inept reasons which are always found out after adverse seasons and dearth, grain will, next winter, be at a moderate, or a low price. To

make the prospect more likely to continue, let us support, from all parts of the country, what the city of London has proposed, and petition the Legislature for a general *enclosure-bill*, and a *commutation of tithes*. Such petitions will encourage, and completely strengthen, those who might otherwise shrink from the task. If these measures are not carried soon, they will again be abandoned. A plentiful crop will obliterate the impressions which have been made as to past and future scarcity: Let those who think otherwise, be reminded of the clamour that was raised, and the enclosure-bills and improvements which were proposed, in 1796, and of the torpid state into which the plenty of 1797-8 sunk the advocates of those measures. We heard but little more of them till scarcity returned. I am, very sincerely,

Gentlemen,

A well-wisher to your Magazine,

A NORTHUMBERLAND FARMER.

P. S. IF any of your correspondents are still of opinion, that the issue of paper, since the commencement of the American war, has raised corn to a high price, I must beg of them to consider, that even since that period, it has been at a very moderate, or a low price, except when unfavourable seasons caused a great deficiency in the produce; and that in 1797, oats could hardly be got off in the spring and summer, at 1s. 5d. to 1s. 8d. per Winchester bushel. If the price, within the last year, has risen above the ratio of the deficiency, it should not, in my opinion, be imputed to the depreciation of money, by the issue of bank-notes, but to what will most undoubtedly happen in every country where there is a sufficient quantity of money, either in paper or in specie, where the Legislature is wise enough to support freedom of trade, and where a deficiency is seen, or apprehended, in any article, more especially one of the first necessity, *to the competition to possess it*. This competition is perfectly just and reasonable, and I fully agree with the Reverend Mr Findlater, in thinking the encrease of price occasioned by it, an advantage to the public, inasmuch as it tends to lessen the waste and consumption, and to prevent dearth from ending in famine. The high price at present, however, is not so much above the ratio of the deficiency in the quantity left for the market as, at first sight, appears. For, as you have very justly observed in your last number, the consumption by

farmers for seed, servants and horses, &c. being the same in a scarce as in a plentiful year, a crop *one fourth* deficient, produces little more than *one half* of the usual supply to be carried to market.

With respect to the circulating medium, I think some erroneous opinions are entertained. As long as our bank notes not only pass without discount, but are preferred to gold and silver, they will not depreciate the value of these metals, and raise the price of the necessaries of life. A currency to a certain amount in specie, in paper, or in both, is necessary for the trade of every country, and beyond that amount, neither the one nor the other, will circulate. When paper money, therefore, is issued, it removes an equal sum in specie, and creates an additional capital for foreign trade, no branch of which, as far as I understand, requires it more in the precious metals, than that in grain, so that, very probably, that circulating medium, the issuing of which has been so much condemned, has contributed, most essentially, to the formation of that large and hard capital, so necessary in purchasing that very article, which of all others it has been supposed to have encreased the price of, and which we could not have imported in such large quantities without it. The ideas I have conveyed as to paper money, not depreciating the value of gold and silver, are, I conceive, supported by several authors, especially by Dr A. Smith, in his Wealth of Nations, at pages 437 and 490, Vol. I., and also by bankers and merchants of great experience.

A N—d F.

The information desired, (in the letter inserted in your last number, signed W. C. Aberdeenshire,) relative to *lime*, is much wanted in many parts of the country; and I hope you, or some of your able correspondents, will soon give it in your Magazine.

A N—d F.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the effect of Tithes.

GENTLEMEN,

YOUR correspondent N. B. p. 18, does not read me fair, when he makes me state the exaction of tithe as being the cause of low rents in England: I have said only, that it is

the *chief cause*, not the *sole cause*, as he infers. *Want of leases*, also, operate the same way, and so must also *want of economy in labour*, (example 5, 6, or 8 cattle in a plough, where 2 might serve); but these two last forbidding circumstances, operate merely in proportion as improvement is prevented by the one, and expence occasioned by the other; but tithe operates in a double capacity towards the reduction of rent, *first*, in so far as its intrinsic deducted value amounts to; and, *secondly*, by as much as the husbandman must be reimbursed for the trouble it occasions him, and which, although an indirect, is to him a very certain source of emolument.

I must still insist, that the drawing of tithe can be no rational excuse for not improving lands in England, as the great body of land there, susceptible of melioration, is such as would repay the extra expence, tithe included, during the very time the improvement was going on. What extra expence, for example, would be incurred, in converting the old fogged pastures of England into corn fields, that would not be defrayed the very first year?

It may indeed appear wonderful, that the farmers should make such an outcry against tithe, when it really is advantageous to them; but it is only one subject of wonder added to another, that we have here to remark. Both proprietors and clergy seem to support them, while N. B. insists, as well as myself, that they are against the interests of either. But, after all, *steady opposition* to the abolition of tithes, is not to be inferred on their part, because they have not yet entered heartily into schemes for commuting them.

The question I put, Whether tithe free-lands are generally better cultivated than those liable in tithe, remains still unanswered, and is indeed unanswerable, but by the production of precise evidence. If tithe were, as asserted, to be so very discouraging to cultivation, it must appear an astonishing circumstance indeed, that the effect, nevertheless, cannot be perceived in any particular case.

March 1801. A Scotch Farmer.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Smut on Wheat.

GENTLEMEN,

I take the liberty of sending for insertion in your Magazine, some experiments and observations made several years

ago on the subject of the *smut* in wheat, and communicated to the Board of Agriculture.

In the autumn of 1796, I collected a quantity of smutted ears from a field of wheat in which they were very numerous; and a number of healthy well filled ears from another field in which there was no smut. The grains were rubbed out of both, intimately mixed and kept in a box for two months, at the end of which they were taken out and rubbed between the hands, in such a manner as to break the whole of the smut balls; the parcel was then equally divided into two parts, one of which was three or four times washed with pure water, well rubbed between the hands at each washing, and afterwards sown in a drill in my garden; the other half was sown in another drill in the same ground without any washing or other preparation, the soil, and every other circumstance of manure, light, heat, air and moisture, being equal.

Both parcels vegetated at the sametime, and for about two months thereafter, there was no visible difference in their appearance: But at that period, I observed many of the plants in the drill that had not been washed, were of a darker colour than the others, these when narrowly examined, were of a dirty green. The plants in the drill that had been washed, were all of one colour, and seemingly healthy; as the season advanced the difference in colour became more striking, and continued to encrease, till the grain was fairly out of the blade, when many of the dirty green ears began to exhibit symptoms of decay.

As soon as the ear was completely shot out, the whole of those in the unwashed drill that had the dirty green appearance above described, were found to contain nothing but smut, and these smutted ears were in the proportion of more than six to one of the healthy ones; while, on the contrary, the drill in which the washed grains were sown, and which contained several hundreds, had scarce one smutted, or unhealthy ear in it: The same experiment was repeated the following season with nearly the same result. Satisfied that washing with pure water alone, would be found a remedy for the disease I made no farther enquiry upon the subject till the following autumn, when, having some very good glasses in my possession, I examined a good many smutted ears, more, I confess as a matter of amusement, than from an expectation of discovering any thing that might throw light upon the subject: Upon a near inspection with the glass, I found that the dirty

green colour of the blades of the smutted ears, was owing to a number of spots infinitely small, resembling the excrement of an insect; my observations were continued during the whole period of filling and ripening, in the course of which I made no additional discovery, except observing that the leaves and stalks of the smutted ears, decayed sooner than such as were healthy.

About the end of autumn, having one day brought home some smutted ears, of rather an unusual appearance, I examined them very narrowly, and discovered that the balls were perforated in many places with small round holes, a thing I had not before observed in any that I had met with: this I ascribed to vermin, and, upon sticking one of the grains upon a pin, and placing it under the glass in a very bright sun, I saw distinctly several small transparent specks upon the beard or downy part of it: I examined several more, and met with the same appearance; but being called hastily away upon business, I was under the necessity of leaving them upon the table, without being able to ascertain whether the objects I had seen were eggs or insects. In the evening when I came home, I renewed the investigation by candle light, in the course of which, I was under the necessity of holding them very near the candle, the heat of which soon relieved me from my embarrassment, by putting them in motion, and shewing me that the specks above mentioned were real insects, nearly resembling wood-lice in shape.

Next day, I repeated the trials by sun light, with new smut balls, and discovered the same appearances, but without being able to make any of the insects stir: Disappointed at not seeing them in motion with sun light, and recollecting the heat of the candle, I threw the concentrated rays of the sun upon them with a burning glass, which completely answered my purpose, by putting them in motion, and shewing them in every different point of view. To describe, with any thing like accuracy, an insect so small as not to be distinguishable by the naked eye, would be an almost impossible task; it is sufficient only to say, that its general appearance is very similar to that of the wood louse.

I slightly tinged some of the grains, upon which I observed these insects, with the common salt and urine pickles; both of which proved almost immediately fatal to them; for though they still adhered to the grains, I was not able, at the distance of five minutes after the pickles were applied, to

discover the least appearance of life in any of them. I have troubled you with this communication, hoping that some of your intelligent correspondents will be able to investigate the subject more completely, and answer, in a satisfactory manner, the following queries.

1st. Does this insect occasion the smut? or does it fasten upon the plant in consequence of its being in a sickly state?

2d. If the disease is occasioned by the insect, would it be prevented by a greater degree of attention to cleanliness in barns, such as sweeping the walls, roof, &c. dashing them once a year or oftener, with quick-lime, &c. and burning the *chaff, dust,* &c. in place of throwing it to the dunghill, as is commonly done?

3d. Would kiln-drying to a certain degree prove a remedy for the dissease?

4th. Is the smut, with which barley and oats are affected, owing to the same cause?

5th. Does washing or pickling prevent the disease in tese grains?

A. Z.

FOR THE FARMER'S MAGAZINE.

Sketch of a Tour through the Northern parts of Scotland.

PART II.

FEW counties have been more improved within our memory than *Angus*, especially those parts where the land is most susceptible of cultivation by the plough; but a great deal remains to be done, especially upon the inferior soils. The spirit with which husbandry is now practised, affords however just cause to believe that every inch of that district will in a little time be applied to beneficial purposes; to which no system can so effectually contribute, as the grass and turnip husbandry—branches of rural œconomy, as formerly mentioned, much attended to by the enlightened and enterprising Angus farmers.

From Forfar to Brechin, 12 miles—The soil, upon the whole, rather of indifferent quality, but calculated for such management as we have described—We saw a few patches of turnips, none of them good. About Brechin, the soil is

of more value; and the plantations and policy around the castle, are laid out with considerable taste and judgment. BRECHIN is a royal burgh of great antiquity, and the Cathedral, though it cannot stand a comparison with many buildings of this kind, found in the southern parts of the island, yet furnishes proofs that the inhabitants of Scotland, according to their abilities, were not behind their English brethren in works of this kind. The noble family of *Panmure* is much respected in the neighbourhood. With them wealth is employed in the exercise of benevolence, but never is influence exerted for the purpose of oppression. In fact, the true character of the higher ranks, is only to be learned among those placed below them. The natural disposition, in this case, operates without restraint, presenting a real picture of the mind unfettered by those obligations which regulate its actions in the company of equals or superiors.

Our next stage was to MONTROSE, distance 10 miles. The soil very variable, but generally kept under the plough. About Montrose it is of a light sandy nature, unable to stand fatigue, mostly in bad order, and the crop suffering severely by the excessive drought, which appears to operate uniformly in direct proportion to the foulness of the different fields. Have not seen any wheat since we left the neighbourhood of Dundee; indeed, not much of the soil is calculated for that grain, except it loams or carses situated upon the banks of the south Esk, or other rivers. Montrose is a town of considerable trade, and the inhabitants are of a true mercantile spirit—Many of the houses are built in the Flanderkin fashion, with their gables to the street, which gives the place an uncommon appearance. The wooden bridge over the Bason, is a curious piece of workmanship, does great honour to the architect, and, before its erection, the people, both in town and country, were necessarily subjected to many inconveniences.

From Montrose to Bervie, 13 miles—Some wheat fields upon the road, and a good many carrying other grains of tolerable appearance.—At *Benholm*, the soil is of an excellent quality, and managed in a superior stile. At Kirkside, in St. Cyrus parish, we observed *half a stack of wheat* in the yard, which is the first we have oberved since our departure from Edinburgh!

Before quitting Angus, it may not be improper to say a few words upon the great care bestowed on the public roads, a circumstance calculated to strike the attention of every

traveller, whose comfort is thereby eminently promoted. From being lately laid out, the defective principles, adopted when the turnpike system was first introduced, are completely avoided. To keep the old line, or to preserve the line streight, was apparently the only object of our old road surveyors. To shun a steep pull, was entirely overlooked by them, though it is obvious, that, by turning a hill, the road is often shortened, independent of the fatigue and danger saved, from not ascending and descending a precipice. Excellent bridges are also built over the different rivers. In a word, for sedulous attention to those objects of police, the gentlemen of this county are entitled to the thanks of every traveller.

We now entered the county of *Kincardine*, or the *Mearns*, as it is commonly called, which stretches along the coast from the north Esk river, to the bay of Aberdeen. The south side of the district is diversified with hill and dale, but the northern parts are very mountainous—A fine strip of land runs along the coast as far as Stonehaven, which is adapted to the growth of wheat and beans; the climate in this tract may be considered as favourable to vegetation, and to every operation of husbandry.

Bervie is a small place, which obtained the honour of being made a royal Burgh, from the circumstance of king David Bruce having landed there in one of his foreign voyages. The land around the town is of excellent quality, and the several crops were above mediocrity. North from Bervie, the the country is in a great measure uncultivated, but where any considerable attention was paid, both grass and corn seemed pretty good. Most of the road is high and unequal, but in the new line marking out, these inconveniences are carefully avoided. Mr L—— at U——s upon the Dunnottar estate, had fine wheat and grass; indeed, all his operations appeared to be carried on with uncommon attention, agreeable to the most approved rules. As we approached Stonehaven, we saw a number of fine fields under decent management.

Stonehaven, though not a royal Burgh, is the chief town of the county. A sail-cloth manufactory is established there; the place is well built, and a tolerable trade is carried on from its port; a considerable quantity of lime shells for the use of the neighbourhing farmers are imported.

To Aberdeen, 15 miles.—After passing Mr Barclay of Ury's improvements, the greatest part of the land in the Mearns district is of the worst quality, being little superior to peat

earth; indeed, the making of peats seems to be the chief employment of the people, and the season being highly favourable for that work, immense quantities have been made, and were making for the supply of Aberdeen and other parts. At one moss, we saw the largest peat manufactory in the kingdom, the trade was very brisk, for carts were busy driving the commodity in every quarter.

Crossing the bridge of Dee, we entered Aberdeenshire, and found the quality of the soil immediately bettered. The land from the bridge to the entrance of Aberdeen, is cultivated like a garden, and so early is the climate, that the bear crop was nearly all ready for the sickle upon the first day of August. Turnips in Angus and Mearns, are all raised in drills; but in Aberdeenshire, the broadcast method is fashionable, which, though more favourable to the braid, is certainly accompanied with many disadvantages in the after management.

The bridge of Dee, which is situated upon the river, about 2 miles above its mouth, was originally built in 1530, by bishop Gavin Dunbar; and was re-built in 1720, by the Magistrates and Council of Aberdeen. It is at this day one of the neatest in Scotland; the tide flows this length up the river, though navigable no farther than the town. Plenty of salmon and trout are catched in the river, which sometimes rises to a great height.

ABERDEEN is the metropolis of the northern division of Scotland, and possesses considerable trade. It is in general well built, and, when the improvements for which an act of Parliament was lately obtained, are fully executed, it will vie in elegance with most towns in Britain. The inhabitants are remarkable for a sedulous attention to business, which is evident to every stranger who walks the streets. They mind the particular object about which they are engaged, without troubling themselves with the concerns of other people. The harbour has of late been greatly improved, according to the advice and direction of Mr Smeaton. Above 18,000l. was expended in the erection of a new pier, and in making other improvements upon the river, solely at the expence of the city, without any public aid or contribution whatever.

A variety of manufactures are carried on at Aberdern, but the staple trade of the city and neighbourhood, has long been considered to be the *knitting* of *worsted stockings*; and here, by the bye, may be stated the substance of a conversation with Mr ——, factor to a great landed proprietor in the

country, wherein the merits of this business were a little connected.

We supped with the gentleman above alluded to, who, we found, posseesed considerable information, and was endowed with all that acuteness for which his countrymen are celebrated. Talking about the number of tenants upon the estate under his management, it was remarked, that if the number was much curtailed, the property would stand a better chance of being improved, while the trouble of settling accounts and arranging matters with the tenantry, would be greatly lessened. He agreed with the last remark, but urged his doubts whether so much rent could be paid by large tenants, as by small ones, seeing that it did not generally arise from the produce of the ground, *but from the profits made by knitting of stockings.* This gave us a fair opportunity to maintain, that, under such a case, he was reaping where he did not sow; for if the land could not pay the rent, it was not fair to draw it from another trade wherein he was not directly nor indirectly concerned; and more than this, that, by setting land to such people who made the cultivation of it only a bye business, he retarded the improvement of the country—We forbear adding more relative to the conversation, further than that we spent the evening in an agreeable manner, and received much information concerning the rural œconomy of Aberdeenshire.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

GENTLEMEN,

In your review of the General View of the Agriculture of the west Riding of Yorkshire, p. 295 of your 3d No, you observe, "on Lime the theory laid down is perfectly consistent with the result of the best conducted experiments in that important subject, particularly those of Anderson, Dundonald, and Hunter. On these principles, it is evident much lime is misapplied, if not thrown away. Many pertinent and judicious hints occur on the best methods of applying lime, well supported by facts." As I, as well as many of your readers are ignorant of the result of the experiments of these gentlemen, I would be highly gratified, and would hope greatly benefited, were you to devote a few pages of some of your next Nos., to give your least informed readers, such as my-

self, a full account of that result, as well as of such hints as may prevent either the loss or misapplication of our lime; for with us the practice is so varying, that we cannot say a preferable mode of application is fixed upon.—In your Yorkshire correspondent's letter, p. 389 of your 4th No. it is said, "when lime is used in this manner, (viz. as a preparation for turnips,) I would recommend it to be laid on in the early part of winter: in that way it will become perfectly effete, before the turnips are sown: a matter of more importance than is generally imagined." I own I am utterly at a loss to conceive how the lime, if it be perfectly effete before sowing the turnips, can conduce to the benefit of the crop or even of the ground.-I would also wish much to have your opinion, or the opinion of your most experienced farmers, in the œconomy of dung; both how the greatest possible quantity may be produced on a farm, and how that quantity may be used, so as to produce the greatest possible benefit to the ground of that farm?—Whether a given quantity of stable dung will prove most serviceable, when used without any mixture, or when mixed up with earth, suppose high raised head ridges, scourings of ditches and such like materials? for on this point, I find in my neighbourhood much diversity of opinion among experienced farmers, and consequently as much diversity of practice.—And if the stable dung is to be used without an earthy mixture, whether it is proper to drive out from the stable yard, and have it much rotted before it is ploughed in? or whether, as I've sometimes done, it is better to plough it in rank, and let it rot in the ground? Any information on these several particulars, will much oblige,

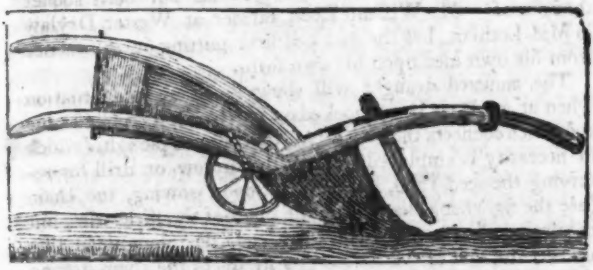
Gentlemen,

Your most obedient servant,

A NOVICE.

N. B. The conductors are well pleased with the judicious enquiries contained in this letter, which appears to have for its object the investigation of matters of high importance to British agriculture; it is reasonable to suppose that the Author is as well qualified to contribute information as to put questions; on that account we solicit a continuance of his correspondence; but as we are well convinced he *does not think himself a Novice*, we recommend a different signature to his future communications.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.



The prefixed drawing of a Machine for Drilling Beans and other crops, upon a simple and efficient plan, having been transmitted to us by a very respectable correspondent, we have duly considered the same, together with the accurate description given of it, and are much gratified in having it in our power to introduce to public notice, an instrument of such obvious utility, which unites the simple ingenuity by which modern improvements in machinery are so much distinguished, with the abridgement of labour,—a thing to much to be desired in the cultivation of the soil.

As the true Benefactors of mankind are only to be met with amongst those, whose time and talents have been devoted to useful subjects; we entertain no doubt, that both the genius of the inventor, and skill of the manufacturer of this machine, will meet with a due recompence; the former in the respect and approbation, he so justly deserves; the latter in an extensive sale of the instrument,—which we recommend to the attention of all Proprietors and Farmers.

THE advantages arising from applying the drill barrow in this manner, must be obvious, and having been already tried, is found to be completely effective in saving the labour of a person to wheel it, while it deposits the seed in the most regular manner; for its own little wheel *a* follows so closely in the tract of the plough-head, as never to be set out of its

course by the clods, which often interrupt the progress in the usual mode. This method of working the drill machine is indeed so very much adapted to the purpose, that it must appear astonishing on reflection, that it has not been sooner thought of. Mr William Lyon, farmer at Wester Drylaw in Mid-Lothian, has the merit of first putting it in practice from his own idea upon his own farm.

The annexed draught will shew its figure and situation when at work, it being hooked on by two iron crooks to the rod which connects the two stilts of the common plough, (which of necessity is employed to draw the furrow or drill for receiving the seed,) and, in the operation of sowing, the chain (see the fig.) hangs loosely on the pin *b* of the little stilt; but in turning the plough at the ridge end, the ploughman lifts up the fore-end of the barrow, by means of the chain, taking the outer link off the pin, and attaching again the chain to the pin at one or two links farther in, which suspends the wheel *a* a few inches from the ground without motion, and of course the grain ceases to fall out, till the man again lets out the chain to its full length when he enters the plough, after turning to a new furrow or drill. The pin *b* is the only addition required to the plough.

This improved drill barrow is made in a very correct manner, at the moderate price of 18s. by Messrs Brown, coachmakers, Abbey-hill, Edinburgh; whose implements of husbandry are indeed in high estimation for accuracy and strength, all over the united kingdoms. They make also, if required, an indented roller for planting potatoes by this machine, which is now practicable from the new mode of cutting the seed by a spherical instrument, which, with the cutter itself, cost 3s. more, and is made to fit the box in the same manner as the fluted roller for sowing the beans, and takes out and in occasionally, as may be required. There can be no doubt that a roller for sowing turnip seed may also be applied to this simple implement, which is not only devoid of complicacy, but completely effective; and which two circumstances—are the very essence of perfection in agricultural machinery.

COMMUNICATIONS ON AMERICAN HUSBANDRY.

No. A.

Method of clearing New Land, and bringing the same into Cultivation, as practised in several parts of NEW HAMPSHIRE, *particularly in the Township of* DARTMOUTH.

FELL your trees all one why, at the proper season of the year, which is in June, July, or August; let them lie till May the next year; then top the limbs and cut off such of the trees as lie high from the ground, which may be done at the rate of two days work to an acre; after a week's dry weather, when the brush and surface of the ground is dried, set fire to the fell'd trees in different parts of the lot, chiefly the windward-most parts; the fire will rapidly run through it, burning up the brush and small limbs, and part of the bodies of the trees, and, at the same time, will burn the scurf and leaves that lie on the surface of the ground, leaving the ashes, which will be a rich manure.—You are then (in a day or two after the fire) to clear up the remaining timber, which is to be cut up into suitable lengths for rolling and carrying together, by mens labour, or drawn with oxen, (as the owner may chuse) into large heaps and burnt: This is done at the expence of 4 to 10 days work per acre, according to the weight of timber and quantity of it unconsumed after the first fire. The ashes made at these heaps, may be collected for making pot-ash, or left for the further enrichment of the ground.

The land being thus cleared of the timber, will now exhibit a sable hue, and is fit for planting Indian corn, at the expence only of about 12 to 15 days labour of a man on each acre, from the felling of the trees inclusively; this clearing must be performed as speedily as possible, as the season (May) is now arrived for planting the corn; no ploughing is required, the ground is mellow, and with ease planted; a man will plant an acre per day, the hills at 3½ feet distance. The land being thoroughly burned over, will not admit of the

growth of any kind of weed the first year, the seeds of the preceding year (if any such are scattered on the land) being consumed by the fire: No labour of weeding therefore is required; and the hilling also, as practised on Indian corn, when planted in old plowed land, is unnecessary to keep the corn up, for the small roots of the trees and the fibres remaining in the ground, are sufficient supports to the stalks of the corn; it therefore requires no labour after planting till you gather it; or the operation of toping, as it is called, or cutting the stalks when they are wanted for fodder for cattle, or when it is wished to hasten the ripening of the corn, which this operation will effect; this is done early in September,—your corn is to be gathered in October. In the month of August preceding, you are to sow the ground with winter wheat, for next year's crop:—The sowing is performed by the seed-man passing through every third row of the corn; and, to perfect the plan, you are to sow your clover, or other grass-seeds, in like manner, taking three rows, passing in the middle one.—The wheat and grass-seed being sowed, hands are to follow with hoes, who are to cover the seed sown, by hacking over the ground; at the same time, cutting up any sprouts from the roots of the trees which may be shooting up, or young trees from seeds.—The next year (the third from felling the trees) you take off a crop of wheat, which, raised on upland in this township, is the finest that I ever saw, yielding, in this method, without plowing the ground, from 20 to 30 bushels per acre. The following crop (the 4th year) will be grass, leaving you a fine field brought into cultivation, with little labour, and without the use of the plough and cattle, and the expence often more than paid the first crop.

To elucidate the advantages of this method of clearing new lands, and bringing them into cultivation, I will accompany this paper with statements of the cost and profit of several experiments actually made on those lands, in which very exact accounts have been kept, and also a calculation founded on those and similar experiments, showing the cost of clearing 200 acres of land, and the profits arising from the same.

No. B.

A Calculation of the Cost and Profit of Clearing 200 *Acres of Land, taken in the State of Nature, according to the method practised in some parts of* NEW-HAMPSHIRE, *particularly in the Township of* DARTMOUTH.

		£.	s.	d.
Dr.	FIRST YEAR'S COST, VIZ.			
The trees on 50 acres to be felled in June; the cost of felling 5s. 3d. to 7s. 6d. per acre; the labour at 2s. 3d. Sterling per day, requiring 2 to 3 days work for felling 1 acre; say at 7s. 6d. - -		18	15	0
Cr.	FIRST YEAR'S PRODUCE, -	NOTHING.		
	Excess in cost -	18	15	0

Dr.	SECOND YEAR'S COST, VIZ.					
The 50 acres trees fell'd the first year, are, in the month of May, cleared up and planted with Indian corn; the cost of which clearing is 10s. to 14s. per acre. According to the season for burning the timber and brush, it commonly requires 5 or 6 days labour:—To clearing an acre of ground after burning, at 2s. 3d. per day, say at 14s. - -	L.	35	0	0		
Cost of seed, planting, fencing, &c. -		9	0	0		
In September, these 50 acres to be sowed with wheat, 50 bushels, at 4s. 6d -		11	5	0		
200 lb. clover seed sowed also -		7	10	0		
Labour of sowing the wheat and hay seed, covering it with hoes by hand, 200 days work, at 2s. 3d. - - -		22	10	0		
					85	5 0
Cost of felling 50 acres more -		-			18	15 0
					L. 104	0 0

Cr. SECOND YEAR'S PRODUCE, VIZ.		£.	s.	d.
The produce of 50 acres Indian corn (felled 1st year) yielding 20 to 30 bushels per acre, at 20, is 1000 bushels, at 2s. - -	L. 100 0 0			
Deduct one-fourth part for expence of harvesting, and loss by accident -	25 0 0	75	0	0
N. B.—In this method no hoeing is required after the planting, unless weeds should spring up, which is seldom the case; such as may appear in August or September, when the wheat is sowed, may be cut down by those who cover the wheat with hoes.				
Excess in cost -		29	0	0
	L.	104	0	0

Dr. THIRD YEAR'S COST, VIZ.				
Clearing the 50 acres felled the 2d year, and planting the same with Indian corn, sowing it with wheat and hay seed - - - -		85	5	0
Felling 50 acres more - - - - - -		18	15	0
		104	0	0

Cr. THIRD YEAR'S PRODUCE, VIZ.						
The produce in wheat of 50 acres felled the first years, 15 to 25 bushels per acre, say at 15 bushels, is bushels - - -	750					
Deduct for reaping, -	50					
Threshing - - -	75					
Housing or stacking -	10					
	135					
	615 at 3s. 9d.			115	6	3
The produce in Indian corn of 50 acres, felled the 2d year, deducting one fourth for harvesting, &c.—as the 2d year - - - - - -				75	0	0
		L.		190	6	3
Cost -				104	0	0
Profit -				86	6	3

Dr. FOURTH YEAR'S COST, VIZ.	£.	s.	d.
Clearing the 50 acres felled the third year, and planting the same with Indian corn, sowing it with wheat and hay seed	85	5	0
Felling 50 acres more, (completes the 200 acres)	18	15	0
	104	0	0

Cr. FOURTH YEAR'S PRODUCE, VIZ.						
50 acres Indian corn, on ground felled 3d year, as above	75	0	0			
50 acres wheat, on ground felled 2d year	115	6	3			
50 acres in hay, on land felled 1st year, now in order for mowing—will produce 50 to 75 tons; say 50 tons, at 10s. per ton, which is making large deductions for loss and expence, the usual price being 20s. and upwards per ton	25	0	0			
				215	6	3
Cost				104	0	0
Profit				111	6	3

Dr. FIFTH YEAR'S COST, VIZ.			
Clearing and planting with Indian corn, 50 acres, felled the 4th year	44	0	0
Sowing the same with wheat and hay seed	41	5	0
	85	5	0

Cr. FIFTH YEAR'S PRODUCE, VIZ.						
50 acres in wheat, on ground felled 3d year	115	6	3			
50 acres in Indian corn, on ground felled 4th year	75	0	0			
100 acres hay, on ground felled 1st and 2d years	50	0	0			
				240	6	3
Cost				85	5	0
Profit				155	1	3

Dr. SIXTH YEAR'S COST, viz.	£.	s.	d.
Cost harvesting 750 bushels wheat, 135 bushels at 3s. 9d.	25	6	3
Ditto 150 tons hay, say half - -	75	0	0
	100	6	3

Cr. SIXTH YEAR'S PRODUCE, viz.					
50 acres in wheat, 750 bushels, at 3s. 9d.	140	12	6		
150 acres in hay, 150 tons, at 20s.	150	0	0		
				290	12	6
Cost -				100	6	3
Profit -				190	6	3

1st year's cost - -	L. 18	15	0		
2d year, excess in cost - - -	29	0	0		
	47	15	0		
Aggregate profit from 6 years cultivation	495	5	0		
				543	0	0
				L. 543	0	0
3d year, excess in profit - -	86	6	3		
4th - - ditto - -	111	6	3		
5th - - ditto - -	155	1	3		
6th - - ditto - -	190	6	3		
				543	0	0
				L. 543	0	0

In the foregoing calculation, the cost of felling trees and clearing land is put at a price proportionate to wheat at 4s. 6d. per bushel; and the wheat for seed is charged at that price; and Indian corn at 3s. per bushel, as seed.—On the credit side, wheat is set at 3s. 9d. and Indian corn at 2s. which is a lower price, especially for the latter, than it commonly bears, and a full allowance for harvesting is deducted. It appears, that, in 6 years, a profit is given of 495l. 5s. in clearing 200 acres of land, and that tract of wilderness converted into a field of grass, besides the advanced value of the land so cleared.

Where a competent number of good hands can be commanded by the cultivator, he may always come within this calculation, excepting any remarkable accidents.—It will be observed, that large allowances are made for the cost of harvesting hay, which generally bears a price of 5 to 6 dollars per ton, and the cost of harvesting is not generally more than one dollar per ton.

 (*to be continued.*)

PART. II.

Review of Agricultural Publications.

Geneal View of the Agriculture of the County of Argyle, with observations on the means of its improvement: drawn up for the consideration of the Board of Agriculture and Internal Improvement: By John Smith, DD., one of the Ministers of Campbelton, 8vo, 322 *pages. Edinburgh,* Mundell and Son; *London,* Wright.

Argyleshire is a valuable Highland district, but, from local circumstances, the husbandry thereof will not afford much information to the amateurs of rural science. It has been fortunate in being reported by a gentleman of respectable character, who displays, in every page, the most anxious desire to promote the welfare of the inhabitants. Perhaps, in some instances, he has mistaken the means of facilitating improvements, and recommended practices customary in other districts, without sufficiently reflecting upon the different circumstances under which they are executed. Upon some theoretical points, declamation is also indulged. These things we shall notice, with that respect which a good man such as Dr Smith justly deserves.

The continental part of Argyle is of considerable extent, being calculated by the author to contain 2,731 square miles, or 1,367,500 Scotch acres; and as two sides of it border upon the sea, the land is every where indented with deep bays and creeks, so as to form the whole country into a number of peninsulas. It contains 25 parishes, and 48,965 inhabitants. The landed property is divided amongst 156 proprietors, whereof one, (the Duke of Argyle) possesses nearly one sixth of the whole valuation. The total acres are arranged in the following manner:

1,213,500 in heath hills and pasture.
100,000 arable.
30,000 woods.
24,000 fresh water lakes and rivers.

Of the arable land, 29,000 acres are computed to lye in the district of Kintyre, which, in point of extent, when compared with the rest of the continent, is little more than as 1 to 10. The appearance of the country is rough and mountainous, the climate moist and variable, and the soil extremely diversified, as is always the case in upland districts.

We have delineated these particulars, in order that our readers, who are unacquaintrd with Argyleshire, may perceive, that pasture, not tillage, should chiefly engage the attention of the possessors. In fact, this is already the case, though the worthy author appears to think that the plough should be more extensively employed. If he does not say so directly, yet a number of his arguments lead to that conclusion. We venture, however, to maintain, that the district is not calculated for raising much grain, and that any attempts to extend the scale of tillage, will not prove beneficial to those concerned. By this observation, we by no means intend to convey an idea, that improvements ought not to be attempted in certain cases. In the lower parts, agriculture may be much amended, though we suspect that this desireable object will not be accomplished by small tenants, a class of men in whose favour the author seems to entertain strong prejudices.

From the 2d section of chapter 3d., we learn, that " many of the most substantial tenants are lodged in comfortable houses, but that the lower ones, which are the most numerous class, are still very poorly lodged." This is followed by some very judicious remarks, concerning the propriety of providing the tenantry with suitable dwelling-houses, and offices, which we hope will not escape the notice of the Argyleshire proprietors. We have, in all our experience of British husbandry, uniformly found, that the general state of farming may be pretty correctly ascertained, by a reference to the condition of the farm-houses and offices of the district. In proportion as rural science is diffused, comfortable home-accommodation is likewise expected, and the landlord, who injudiciously declines to provide commodious buildings, is not only a foe to his own interest, but indirectly an enemy to the prosperity of agriculture.

In the chapter upon the *size of farms*, we apprehend there is much matter wholly inapplicable to the district of Argyle. Granting, for argument's sake, that the interest of the country required the size of tillage farms to be curtailed, still it appears from this work, that, in the lower parts of the county,

where tillage is more attended to than pasturage, or where these two objects are conjoined, the possessions are generally of a moderate size. So far, even upon the author's own principles, the public welfare is guarded sufficiently by the actual practice. What is said, therefore, can only apply to the sheep-farms in the higher districts, which are confessedly of a great extent, and necessarily must be so, if it is meant that the proprietor should be benefited by the fee-simple, or the tenant by the leasehold of the premises. It does not appear that in such situations, the plough can be used with advantage, nor is any thing more certain than that, where the climate is unfavourable, the soil sterile, and the country mountainous, aration ought not to be exercised. The value of the labour in such cases almost consumes the crop, while the poor occupant derives no profitable return from his most ardent exertions. The system, which can be carried on at the smallest expence, and with the most advantage to the parties interested, is, therefore, in every point of view most eligible; and if the land will yield the most profitable return when employed in breeding and feeding cattle and sheep, it is as demonstrable as two and two make four, that this system ought to be preferred.

That such a system will lessen the useful population of a country, we strenuously deny, though Dr Smith affirms, that this "is obvious to the most shallow capacity." We lay it down as an axiom, that the mode of occupation, which permits the tenant to pay the greatest rent, will, in general be most favourable to population. It is, without all dispute, most beneficial to the community at large, for how can a greater rent be paid, unless more commodities are produced. This increased produce serves to support a superior population, while the augmented rent enables the proprietor to keep more servants, or execute improvements upon his estate, which cannot be accomplished without hands being employed. The tenant himself, from possessing a suitable capital stock, can undertake many works, utterly out of the power of small tenants who are not only incapable of such exertion, but remain in a most listless deplorable and uncomfortable state.

When Dr Smith speaks of cultivating and improving the Highlands of Argyleshire, (and it is to this part of the country his arguments must be applied, seeing he acknowleges the size of farms to be moderate in the lowland district) he certainly did not reflect upon local circumstances, or how their cultivation could in any respect be beneficial to the com-

munity. Under these impressions, we consider the most of what is said, pages 24 to 34, inclusive, to be inapplicable to the husbandry of the district reported. To argue against large towns and cities, is also as foreign to the question, when treating of Argyleshire husbandry, as it would be in the history of Otaheite.

We extract two paragraphs from the section upon *rent*. The *first* shews, that the author possesses a liberal and benevolent mind, the other strikingly displays the abject and depressed state of the tenantry.

" The occupiers of land, whether in pasturage or tillage, ought certainly to be able, like labourers or tradesmen, to live by their occupation, and to support their families by their daily care and labour. The interest of the money invested in their stock, with the proper allowance for tear, wear, and risk, they should be able to save as a provision for their families, and for old age; as the money so invested would give this return, if laid out on interest, without any trouble whatever. It cannot be considered as any part of the produce of the ground: and therefore no part of it ought, in equity, to enter into the payment of the rent; and yet not one in ten, perhaps, is able to save it; nor do they commonly advert that so much ought to be saved in justice. They are generally satisfied, if they can keep their stock undiminished; so that the business, in general, returns much less to those engaged in it, than almost any other. A happy predilection in favour of the occupation in which they were brought up, is what induces so many to follow it. Perhaps it may also be said, that there is implanted in the human mind, for wise purposes, a certain innate disposition, or instinct, which leads it to delight in rural occupations.

" The rents in general, especially upon the larger estates, are paid in money: but tenants on the lesser estates, and near their landlord, often pay some of the rent in kind, and are almost always subject to servitudes. Peats must be made and led; so must the hay: assistance must, perhaps, be given in seed-time and harvest. So many wedders, fowls, eggs, butter and cheese, lint, wool, oats, meal: so much spinning from the wives, or perhaps so much yarn; and sometimes they must pay the weaver, and give it in sheets and blankets. In short, so many hundred things are required by the laird, and so many hundred things by the lady, that it is impossible to pay them. It is sometimes expected, over and above all this, that the poor wretches shall come with presents, when they themselves are almost objects of charity! And to keep them in perfect dependence, they have often no leases. The miserable creatures

on lands under this management, have neither meat, nor clothes, nor habitations; and a stranger would know them and their lands in passing, as easily as Solomon did the garden of the sluggard. Such practices cannot be reprobated in too strong terms. They are the ruin of the tenant, first; and, in the end, they will ruin the landlord."

We observe the following judicious note annexed to the section upon *rent*:

"What proportion the rent of a farm should bear to its produce, depends so much on soil, climate, situation, and other circumstances, that no general rule can be laid down on the subject. On the rent of sheep-lands, as occupied with us at present, some observations may be seen in Chap. XIII. Sect. 2. In regard to arable lands more particularly, it is a common, though perhaps not a just remark, that 1-third of the produce should go for rent, 1-3d for expence of management, and 1-3d for the farmer's profit, interest, &c. The oldest observation extant on this subject, is in Gen. xlvii. 24.; where 1-5th is allowed for rent, 1-5th for seed, 1-5th for food, 1-5th for servants, and 1-5th to lay by for provision to children."

Those people who are for allowing the proprietor one-third of the produce, seldom specify whether it is the gross or disposeable produce that is meant. In general cases, one-third of the gross produce is too much for rent, because two-fifths, and in some instances one-half, is consumed upon the premises, independent of the portion of land under an unproductive fallow. If they mean one-third of the disposeable produce, the scale would be regulated nearly upon the principles mentioned in sacred writ. No fixed principle, however, will apply in all cases, for, in different situations, produce is raised at different degrees of expence, but such things, if left to themselves, will generally find a proper level.

Tithes were valued in Argyleshire at an earlier period than in other counties, a proof that the proprietors knew their own interest, though it is to be lamented, that this should operate so severely against the established clergy. We believe that stipends in this district are smaller than in other parts of Scotland, while, under the existing laws, they cannot be augmented. The loss sustained in consequence by the state, is described in a pointed and candid manner:

" In consequence of this, (the fall in the value of money) clergymen are now sunk in their rank in society, and fallen almost to that which schoolmasters held formerly; so that many of them are obliged to betake themselves to other shifts, such as farming and grazing, in order to support their families. By this, their dignity, utility, and influence, are lessened; and the cause of religion and virtue, and, of course, the true interest of the nation, suffers: For, let our vain and new philosophers allege what they will, there can be no national prosperity, of any duration, without religion; and there can be no religion without a respectable clergy, nor a respectable clergy without a a decent maintenance being annexed to the office."

Dr Smith is a friend to *leases*, without which, he considers that landlords " can expect no improvement, and consequently less rise of rent." Some of the prevailing covenants may be justly viewed as objectionable: viz. That the rent should be paid at Martinmas, after the crop is reaped, which, it is evident, is impracticable upon arable farms, unless the tenant's capital stock is thus employed. The repairing of buildings appears to be too much laid upon the tenantry, though the general custom of Scotland will sanction the measure. In other respects, the Argyleshire leases do not impose any severe burthens.

The *husbandry* of Argyleshire may be more accurately ascertained, from the following extract, than if a hundred folio volumes were written in illustration thereof.

" Those who have large possessions live well; those who have small ones live poorly. The small farmers, for nine or ten months in the year, make generally two, and sometimes three meals a-day of potatoes, with herrings or milk. Such as can afford it, salt a cow in winter, and kill a sheep or two in harvest. Oatmeal pottage, or oatmeal jelly (*sowens*), make commonly the third meal a-day, with milk; and oaten or bear bread, when the potatoes fail, supply their place. In Kintyre it is customary to take some thin pottage, or a little bread and milk, before they begin work in the morning; and after dinner, should it even be potatoes and herring, or flesh and broth, they have commonly a little bread and milk, by way of desert or supplement. But neither of these customs are known in the other parts of the county."

In the chapter upon *implements*, mention is made of Mr Campbell's improved plough, " which, instead of a coulter,

has an erect plate of iron connected with the sock, the intention of this contrivance being to strengthen the beam; and keep the plough from being choaked in stuble ground." If the plough possesses no other merits than these, the premium from the Highland Society was certainly ill awarded. Why tempt the people to leave a high stubble, in a county where fodder is scarce? No plough will choke in stubble ground, if the crop is cut in a proper manner.

Chapter 6. contains some excellent observations relative to *inclosures*. We select the first paragraph as a specimen:

" Good enclosures are the foundation of all improvements. Whether lands are employed in tillage or in pasturage, enclosures are necessary in order to turn them to the best account. In arable lands they save the ground from being poached when wet, and put it in the farmer's power to raise green crops with much greater advantage than he can do without them. In pasture lands they save the expence of herding: allow the cattle to graze freely, without being teazed by herds and dogs; and, by giving them clean grass and a change of pasture as they need it, enable them to thrive better than they could do otherwise, and support a greater number on the same extent of ground. Enclosures are likewise of great benefit in the view of giving shelter to some grounds, and draining others, according to the nature of the grounds and the kinds of fences or enclosures. By judicious enclosures, most low-lying arable grounds might be made of more value, by at least one third, to the occupier, as well as of great benefit to the public, by increasing the quantity of corn, wool, flax, butter, cheese, butcher's meat, manufactures; and, by means of all these articles of food and employment, greatly adding to the riches and population of the country."

We cannot avoid remarking, that the Argyleshire practice of taking 6 and 7½ per cent from the tenant, for money expended upon inclosures, is highly unreasonable, notwithstanding it is sanctioned by the custom of other counties. " It is hard indeed," as the author justly observes, " if lands can- " not be improved under double the profit which is generally had from buying them." In every case where the tenant is bound to support inclosures, to take such a rate of interest, deserves to be reprobated as an usurious transaction.

In the section upon *tillage*, p. 67. Dr Smith gives an opinion concerning the changing and streighting of crooked ridges, which, according to our experience is not strictly correct: He says it can hardly be performed with the plough,

without burying much of the best soil, and therefore recommends the spade to be used. We who have streighted a considerable extent of land formerly in the "*serpentine stile*," can safely aver that the operation may be executed by the plough without being attended by dangerous consequences. It is at the same time acknowledged that a great degree of attention is required in the levelling of the old ridges and forming the new ones, so as the surface and subsoil may be sufficiently mixed. For this purpose, each ploughing in length should be followed with one across; repeated harrowings and rollings are also necessary. A dose of hot lime is of great utility in quickening the soil, formerly out of the reach of the sun and air. If dung is also administered, very little hazard attends the change, though we repeat, that a great degree of attention is required in the several operations.

When treating on the *rotation of crops*, Dr Smith judiciously recommends a variety of alterations of the common practice; but we are not sure if the comparative produce of two farms managed in the old and new way, be stated in such a manner as to carry conviction to the minds of those who are not in other respects sufficiently informed. In p. 77, he makes a difference in favour of the second state, of 62 l. 2s. without pointing out at what expence the encreased produce is to be gained. For instance, the pasture-grass in the first state is charged at 5s. per acre, whereas in the other 20s. per acre is allowed. We need hardly say, that the superiority of the last would arise from improvements made either by ploughing, manuring, draining or inclosing; consequently, it is only fair to deduct from the balance the expence of all the extra labour and outlay: These calculations remind us of some we have seen in the writings of the English Economists, particularly in those of Mr Arthur Young.

The *climate* of Argyleshire appears well adapted to the culture of *flax*, and we coincide with the author in thinking that the growth of this plant may be considerably extended.

Few things would contribute more to the advantage of this county than the raising a great quantity of flax, for which our soil and climate are well adapted. Our climate is warm and moist; and we have a great deal of good sandy loam, which is the best ground for flax. If the culture of this plant were extended as far as the other operations of the farmer would allow; or if the ground, when tilled, were let to the poor, or to persons who, as in Holland, would make it their sole busi-

ness to attend to it; it would prove an immense benefit to the county, and furnish employment to the poor, especially to the female part of them, in every stage of its manufacture. When the crop is tolerably good, the produce of a single acre may be estimated at 15 l. on the field, at 20 l. when it comes from the mill, at 60 l. when spun into yarn, and at more than 100 l. when wrought into cloth, and bleached. Thus 1000 acres, (which would be but 40 to every parish on the continent) would yield materials for a yearly produce of 100,000 l.

In a country where stock must necessarily be an object of primary attention, the cultivation of *turnips* for winter food ought not to be neglected. We observe, with concern, that only a few acres are as yet raised by the farmers, though no branch of husbandry deserves such sedulity. Four acres in one season is the greatest quantity hitherto raised by a farmer in this county, for which a premium was obtained from the Highland Society. In describing the utility of ruta-baga, Dr S. adds, " it is said that horses will eat it, though they will seldom eat turnips." Horses will eat and thrive upon both, though undoubtedly best upon ruta-baga, because its qualities are more nutricious. A foot-note, p. 103, which we understand is an extract from Encyclopedia Britannica, describes carrots as the best food for horses, which likely is the case; but when 3 acres of this root, grown at Parlington in Yorkshire, is stated as feeding 20 work horses, 4 bullocks and 6 milk-cows for 7 months, viz. from the end of September to the first of May, besides fattening 30 hogs on the refuse, we are tempted to smile. Taking the produce at 10 tons per acre, which the Bath papers estimate to be an average one, the crops would turn out 67,200 lb. averdupoise, which divided among 30 horses, bullocks and cows, for 7 months or 210 days, would just give 10 pounds 10 oz. per day to each animal, independent of what was consumed by the porkers! It is added, " they had no other food but a *little hay*." We cannot say what is here meant by the expression *little*, but certainly with 10 lb. of carrots, each horse would eat 2 English stones of hay per day, and would not do much work, unless aided by a feed of corn likewise.

We observe a quotation from Young's Annals, of the like import with the above, respecting the advantage of consuming clover in the house instead of eating it in the field, a point upon which, abstractedly considered, there can be no dispute. In the quotation, Mr Ramsay of Ormsby near Yarmouth, is

stated to have soiled 20 horses, 7 cows, 5 calves, and 5 pigs on 7 acres for 17 weeks. Now let us see what this will give each beast per day. A good crop of hay, upon an English statute acre, will not exceed 240 Scotch stone—Take the second crop as equal to one half of the first, this will make 360 stone, which, at 22 lb. averdupoise each, is 55,440 lb of dry hay, or, according to the common calculation of 4 lb. green for one of dry, it is 221,760 lb. As the number of the animals supported upon the crop, amounted to 37, and the period 17 weeks or 119 days, the quantity of grass could not exceed fifty averdupoise pounds per day to each animal, or what would make little more than half a Scotch stone of hay. We cannot help expressing our surprise, that a gentleman of Dr Smith's discernment should have adopted such quotations, or built upon them, seeing the rottenness of the foundation is so easily ascertained.

The chapter upon *woods* and *plantations* conveys much useful information: After stating that the soil, climate and situation of the country are remarkably well adapted for planting and raising timber, " Dr S. proceeds thus:

" The expence of planting will depend much on the size of the enclosure; the expence per acre being always less in proportion as the enclosure is larger. The fencing of an enclosure of 20 acres exceeds a fifth of the cost, though it is but the 25th of the space, of one of 500. In the north of Scotland, " the expence of enclosing a plantation of at least 100 acres, " and planting it with Scotch fir, is generally calculatedat " 20s per acre, and the undertaker upholds the plants for se- " ven years." In the east of England, the expence of enclosing and planting is said to be 3 l. per acre. Let us take the medium between the two, and suppose a plantation of 500 acres to cost 1000 l. or 2 l. per acre. In most cases, much of the expence of enclosing will probably be saved by sea-shore, gullets, precipices, and other advantages of ground. The plants too may be raised from the seed, and set by the planter's own servants, at a small expence; or, instead of plants, the seeds of trees may be sown in the plantation, by which the expence will be greatly lessened. But, without reckoning on these savings, let us abide by the first estimate of 2 l. per acre, and proceed to calculate the return.

Suppose, then, that, at the end of 11 or 12 years, only two thirds of 5000 plants, originally set in the acre, are found to have done well; of these, one half, or 1666, may be taken away for railing, firing, &c. and if sold so low as a half-penny

each, they will come to 3 l. 9s. 3d. which will be more than defray the original expence with interest.

From the age of 16 to 25, a thousand more may be gradually taken out of the acre, which, at 4d. each, will make	L. 16	13	4
The 666 remaining on the acre will, at 50 years, be worth 2s. 6d. each	83	5	0
	L. 99	18	4

This divided by 50 will give about 2 l. a year for the acre, and near 50,000 l. from the whole plantation, without reckoning interest on the thinnings, or any advantage of grass and shelter with the plantation may give to cattle after they may be let into it with safety."

We cannot agree with the opinion given p. 172, viz. that, by expending 3 l. per acre upon the draining of *waste land*, the annual value will be raised from 1 s. or 3 s. per acre, to 15 s. or 20 s. Draining is without doubt absolutely necessary, but still the advantages attending it upon lands commonly stiled *waste*, will be very inferior to what is here stated. The expence of inclosing and manuring, ought certainly to be included; for, without these meliorations, the rents condescended upon would not be gained. While the merits of improvements are under consideration, it is but fair to state the probable expence—In page 176, Dr Smith erroneously states, that waste lands are improved in England, though often taxed for tythes and poor rates, to the amount of 5 s. and 10 s. per acre. We beg leave to inform him, that, in every division-bill we have seen, a part of the waste is set apart to the tythe-holder, and that the lands improved by the owners are in all time coming tythe-free.

The chapter upon *improvements* is well worth perusing; but we are not sure whether the author is well founded in what he says concerning the application of lime. Strong clay soil, such as that of Kintyre, would require a great deal more than 120 Winchester bushels to stimulate it, and the quantity ought to be increased instead of being diminished, when a second dose is administered. We are rather in the dark with regard to the oils and substances which lime attracts from the atmosphere, therefore cannot recommend that it should be allowed to remain upon the surface for any length of time. The best cultivators are decidedly of opinion, that the sooner lime is incorporated with the soil, the quick-

et are its operations—Some beneficial information is given respecting the advantages of mixing lime with earth, &c. and using it by way of compost. We have seen the utility of this compost in cases where the naked article totally failed. The proper management of dung, is also accurately described

The Argyleshire *breed of cattle* are famous over all Britain, and, before sheep were introduced, they were confessedly the only article possessed by the tenantry from which rents could be paid. This valuable variety of live stock are small but hardy breed, and, from being generally stinted in the proper quantity of food, are prevented from attaining to the size they are otherwise capable of. It is evident that better keep both in summer and winter, is necessary: This would also fit them for market at an earlier period, though we believe it would lessen the value of the beef.

The first section of chapter 13th, which is devoted to this subject, we can with confidence recommend to the consideration of our readers. A valuable paper from *Mr Campbell of Combie* is included, which we would willingly have extracted, did our limits permit. The sheep-husbandry of the county occupies the 2d section of the chapter, and though Dr Smith candidly acknowledges that "the mountains of Argyleshire are better adapted for sheep than for black cattle," and that, "under the sheep-system they make a much better return both to the farmer and the landlord, and furnish a large fund for manufacture and commerce," yet he thinks "all these advantages are more than balanced by the effect which sheep have produced upon population." While we respect the philanthropy which dictated these, and a number of other similar sentiments, we are under the necessity of offering a few remarks upon a system incongruous in every respect, with a work professedly written for the purpose of disseminating improvements.

We might premise our remarks, by enquiring whether the rearing of black cattle, abstructedly considered, necessarily furnishes employment to a greater number of people than if the land upon which they are supported was used in rearing or feeding sheep. Certainly, "a shepherd and his dog",—a phrase not original, but bandied about since the days of Henry 8th—are capable of watching over the one as well as the other, and therefore, if a suitable number are entrusted to him, in both cases, the scale of population is not affected. We are aware, it may be here urged, that the extent of ground

which must be kept in cultivation for providing winter-food to the cattle, constitutes the difference. Though this is an argument that may be used against the sheep-husbandry in every district, we conceive it carries no weight in the present instance. The mountains of Argyleshire are naturally incapable of being cultivated by the plough, consequently a system which includes aration, is not reconcileable with the due management of the territory: Shall the landlord be beggared, the tenant starved, and the most useful of our manufactures limited, merely that a system might be continued, which even its warmest supporters acknowledge to be inimical to the national prosperity in every other respect, except that of population? If population was lessened by a general introduction of the sheep-husbandry in the Highlands, (a circumstance we don't believe,) better would it be for the landed proprietors, to support the consequent excrescence at their private expence, than allow their property to be wasted, and deteriorated by the continuance of a system, under which both the people and the stock are stinted and starved.

In arranging the rural œconomy of a country, it ought to be a chief object, that every part of the soil is employed in such a manner as may ensure the greatest possible return to the national fund or capital stock: Every improvement whatever tends to promote this purpose; even the planting of timber upon waste land, which at first view is eminently prejudicial to population, deserves to be ranked as an improvement of considerable importance. If the soil in one district is beneficially employed, the consequences are directly favourable to population in others. Work is hereby provided to people in other quarters, and the profits derived from the raw article, in the first instance, joined to what is gained from working it up in the succeeding stages, contribute to the encrease of national prosperity.

Applying the above observations to the district under consideration, it necessarily follows, that if the mountainous district can be more profitably employed in breeding sheep, than in aration, or under the cattle-system, that such is of the greatest public utility, and ought to be encouraged by the landed proprietors. We have purposely avoided the subject so far as *local population* is affected, being convinced, that in a general point of view it is precisely the same to the country, whether the people reside in one district or another,

provided they are comfortably supported and usefully employed.

We are sorry to notice, that an attempt made by that worthy nobleman the Duke of Argyle, and others, to establish the woolen manufacture at Inverary, has not succeeded so well as could have been wished; and that the trade is now chiefly confined to the making of carpets. To introduce manufactures, is at all times a difficult business, as the first beginners are necessarily obliged to undertake every branch from the purchase of wool to the selling of the article, which is inconsistent with the perfection attainable when labour is properly divided among the several artizans employed.

Amongst the obstacles to improvement, the unhappy frequency of our wars is classed, and a computation is made, that every war drains Argyleshire of between 3000 and 4000 of its most active and able hands. While we cordially concur with the worthy author, in wishing that "some general court could be established in Europe, in which all the quarrels of its ruling powers could be adjusted without the dreadful appeal to the cannon, the bayonet, and the sword,"—we cannot help remarking, that the case complained of proves, that the population of Argyleshire is superior to what is required for useful purposes. In those districts, where husbandry is successfully practised, or where a demand for labour prevails, it is impossible, under every exertion, to recruit the most favourite regiment; because employment, of every kind, can in such instances be readily procured, the want of which is the strongest enticement for a man to engage in hostile affairs.

We must now finish this article, which has run to a greater length than we intended.

If Dr S. has manifested some prejudices against what, with strict propriety, may be called the new husbandry of the Highlands, he, in many instances, has compensated this defect by the ardent desire displayed to promote the welfare and happiness of his countrymen. When the work arrives at a second edition, we shall feel much gratification, should any of the above remarks then prove serviceable.

N.

MEMORIAL concerning the present scarcity of Grain in Scotland, with a proposal for an easy, effectual, and expeditious Remedy. By the Reverend Professor WALKER. Edinburgh, Stewart and Co. 16 pages Octavo.

VARIOUS opinions are entertained by speculative men, relative to the present scarcity, and numerous projects are daily submitted to public consideration, for preventing the repetition of such a calamity. Among people of business, we mean such as are practically acquainted with rural affairs, there is not a shadow of difference as to the *cause*, though they may differ with respect to the *extent* of the scarcity. They, one and all, assign it to the unkindly seasons with which we have been visited, which produced two successive deficient crops; and the justice of their conclusions has been sanctioned by the highest national authorities.

Professor Walker, however, without reflecting upon the cold humid season of 1799, or the unfavourable auspices which accompanied the crop of 1800, from the time that ploughing for it commenced, till it was ready for the sickle; thinks that the real cause of the scarcity "is of a more remote kind," and therefore suggests a remedy which he views as "easy, effectual, and expeditious." The cause, which he assigns, is the encrease of pasturage, and the consequent abridgement of tillage, arising from the great consumption of butcher-meat by the inhabitants of Scotland; and this alteration of our mode of living, he thinks has been remarkable since 1750. His remedy is to plough out, or restore to tillage, a certain proportion of the pasture lands, by which measure, "before the end of September, this part of the kingdom may be blessed with plenty and cheapness."

To us, who have paid considerable attention to the subject, and who have known the usual modes of farming practised in Scotland for a number of years, the principles assumed by the learned professor, appear wholly unsupported by facts. We are rather inclined to believe, that tillage has considerably encreased since 1750, and that, under the superior management exercised, the produce of a given spot of ground has been greatly augmented: Let any person reflect upon the extensive improvements introduced since the æra condescended on, particularly in the southern and western counties, and he must acknowledge that aration is in no respect abridged; but

that, on the contrary, it is practised upon as large a scale as is consistent with good management, and the welfare of the country. Pasturage, in general, does not seem to be the hobby of Scottish farmers, or why are they commonly restricted from ploughing more than a certain part of their possessions? In fact, the quantity of grass land does not exceed what is required; for butcher-meat, milk, cheese and butter, are equally scarce as grain, while the rent is fully as much increased in the one case, as in the other: Besides, the change in the mode of living from grain and vegetables to butcher-meat, ought to have lessened the demand for the former articles, as, under a parity of circumstances, a smaller quantity of them would be consumed.

The comparison made between the produce of corn and cattle, on the same space of ground, is partly true, and partly erroneous. We believe, that the quantity of meat produced from an acre of grass land, is pretty correctly stated, and so may be the bolls of grain, at least, while the land carries oats; but the professor, when he mentions that an acre of this grain will yield 1280 lb. of meal, and feed three laborious men in health and vigour, for the same time as the acre of grass will feed one man, evidently assumes too much—he makes his whole crop disposeable, without attending, that nearly one fourth of it must be deducted for seed and horse corn, which is nearly the same thing as if he had credited his grass land for the whole weight of the animals fed upon it. We are glad to hear, that an acre of grass land, capable of feeding five sheep, can be got at forty shillings, as our information led us to believe; that the market-value was much higher. It is also with pleasure we learn, that such a handsome profit as two pounds fifteen shillings per acre, can be gained by the grazier after paying that rent; though we apprehend this circumstance, if correctly stated, will prove an unanswerable argument against ploughing such land.

Upon the supposition that the professor's *remedy* is to be adopted, we must enter our solemn dissent from the plan recommended for putting it in execution: To take two crops of oats and one of barley; or, what is infinitely worse, to take three crops of oats, and then lay down the land to pasture, would be attended with dreadful mischief to the interest of the proprietor, as well as to the future prosperity of the country. Instead of a profitable crop of clover and rye grass being got in the fourth year," the landlord would most likely get a silly crop of rye-grass, along with a full crop of this-

tles, quickens, and other noxious weeds. All old pasture land requires to be completely summer-fallowed before artificial grasses are sown; and the proprietor, or tenant, who neglects this necessary measure, acts in direct opposition to his own interest.

Without noticing the practical part of the memorial at greater length, as we hardly believe the author will have many disciples, we may conclude with a single observation, viz. That if the scarcity was attributable to the abridgement of tillage, the like calamity might have happened in 1798, as well as during the last and present unfortunate years, the public inclination for butcher-meat being equally prevalent at each of these periods: In a word, the return of fruitful seasons will convince every person, that the cause of the present scarcity was not of "a *remote* kind," but that it was open to our eyes, and recognisable by such as would take the trouble of investigating it.

N.

A correspondent, whose opinion is entitled to much respect, having recommended that a section of this department should be devoted to "*A Review of the Reviewers*" we have, agreeable to his advice, resolved to engraft this branch upon our original plan, and also to extend it further, by including strictures upon such communications as may have appeared in our own work, which require to be criticised. The editors of the London periodical publications, are in a great measure ignorant of *rural affairs*; at least, their knowledge goes no farther than theory; hence, their reviews of agricultural works, are partial, superficial, and often erroneous. They are more adapted to mislead, than to direct the public mind; for with these *judges of the nominative case*, error, if plausibly told, will pass with impunity, while, in other cases, unmerited severity will be dispensed with a rigorous hand.

The Reviewers Reviewed.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

GENTLEMEN,

The West York Agricultural Survey, minutely reviewed, by a gentleman resident in the Riding, in your 2d. and 3d. numbers, having been severely handled in the August *British Critic*, and November *Monthly Review*; I beg leave to say a few words, explanatory of the principles upon which that survey was written, and to offer some remarks upon the criticisms made by the editors of these two periodical publications.

Every person in the least acquainted with the English Rural System, will be sufficiently apprized, that the bond of connection betwixt landlord and tenant, is formed in such a manner, as to render the latter more dependent than what is compatible with the state of enlightened society, or the practice of improved husbandry. The legal policy of the country may be considered as inimical to improvements, and the natural consequence of these radical defects has been, that, while trade and manufactures have flourished, agriculture has continued nearly stationary for a century past, unless in those districts where these obstacles have prevailed in a less degree.

When the Yorkshire surveyors were fully acquainted with the prevalent agricultural system of the district, they were at no loss to comprehend the causes which prevented the most useful of the sciences from advancing towards perfection, with as much rapidity as others. They believed that, unless the system was totally changed, no material improvement could be accomplished, and they judged, that the recent institution of the Agricultural Board was a proof, that these subjects would at least meet with an impartial investigation. Upon these grounds, they, in their original report, entered at large upon the articles of leases, covenants, tythes, &c.; and perhaps these subjects were discussed, if not in a superior, yet certainly in a more minute manner than by any of their brethren.

It will readily be conjectured, that a considerable part of such a report was badly calculated to procure them the favour of the parties interested. Many of the proprietors, it is believed, were offended by the observations upon leases,

and thought, that if discretionary management was committed to the tenantry, their property would be rendered useless. The tithe-holders gnashed their teeth at the proposal of a commutation; while the honest farmers felt hurt at the censure bestowed upon several prevalent practices, without reflecting that the surveyors attributed the defective practice, not to them, but to the imperfectness of the general system. Under these circumstances, the survey could not be popular, nor did the surveyors expect it. They know that, in general cases, to tell a man his error, is the sure way to get his enmity; consequently the reception given to their gratuitous exertions did not excite much surprise.

The outlines, or rough sketch of the report, having been widely circulated, a considerable number of copies were returned to the Board with marginal remarks. These were put into the hands of one of the surveyors, who, at the pressing desire of Sir John Sinclair, had undertaken to arrange the work for publication, agreeable to the plan devised by the Board; and, after making enquiries in every quarter of the district, concerning additional information, a General View of the West York Husbandry was submitted to public consideration.

Having thus stated the principles upon which this *general view* was written, and the several circumstances connected with its publication, allow me now to notice what has been urged against it by the *British Critic* and *Monthly Reviewer*.

The first of these gentlemen, who is well known to be fierce for *moderation*, and avowedly hostile to amending the grossest abuse, has bellowed out, "*Ne sutor ultra crepidam*," in the ears of the county-surveyors, till he is hoarse. Upon this occasion he "out-Herods Herod," and belches out his anathemas with equal zeal, as if the improvements, recommended by the author, were calculated to overturn our happy constitution in Church and State. With him, the person who proposes to renovate the poor-laws, or to commute tithes, is considered as

"A Jacobin, a beast, a knave."

He entertains a violent prejudice against the surveyors, because they are North Britons, which, no doubt, is such an original and heinous offence, as cannot be expiated.

"———D——n a Scot,
How can the rogues pretend to sense,
Their pound is only twenty pence." RODONDO.

"Where was the necessity," exclaims the sapient British Critic, "for sending three *North Britons* on such a mission —might not *Englishmen* have been found qualified to view and report faithfully concerning an English county." These elegant compliments are certainly quite consistent with the critic's sentiments upon the utility of a general union of the whole British empire, and of course will appear very consolatory to the natives of Ireland, whom he has been hugging to his bosom for twelve months past. Pray, where lies the difference betwixt an Englishman and Scotchman, since the union of the two nations? or, should any distinction be made betwixt the southern and northern parts of the island, more than betwixt the inhabitants of two conterminous shires? The ground occupied by the reviewer, in fact, permits the survey to be condemned, without hearing more evidence than what is contained in the title-page.

That many Englishmen might have been found, qualified to view and report faithfully concerning the husbandry of Yorkshire, cannot be questioned; but it is equally certain, that none could be procured who would undertake the office. The West Riding was the last district for which surveyors were appointed, and it stood a blank in the list, till the gentlemen, originally nominated for Northumberland, resigned that county, and undertook an office, from which they have gained nothing but a great deal of personal trouble, and not a little petulant abuse. Whether it was owing to the terms offered by the Board of Agriculture, or to the extensiveness of the district, and the complicated state of husbandry practised, that occasioned a demur, it is not my business to enquire; but that every gentleman, to whom the task of surveying was offered, declined such an honour, (for profit was out of the question) may be safely affirmed. If I am wrong, Sir John Sinclair, and many others, have it in their power to correct me.

Having cleared up the point, viz. why *Scotish surveyors* were appointed to examine an *English county*, I shall now proceed to *review* what is said by the *Reviewer*, concerning the result of their examination. If the candid reader expects that the *English* critic, (I cannot call him a British one, for reasons already assigned) animadverts upon the leading and general topics of the report, he will be miserably disappointed. Every thing mentioned concerning leases, covenants, improvements, and the state of the country, remains unnoticed, while a few solitary passages, relative to the poor-laws, and

the taking of tithes in kind, are considered as furnishing sufficient evidence for pronouncing the most unqualified condemnation.

But to proceed to particulars; After a bitter exordium, wherein the general plan of the county reports is severely censured, and quotations of two words are joined to those of three, (a scheme well calculated, no doubt, to throw light upon the business) the critic first notices what is said by the surveyors concerning the public burthens that affect the tenant, or, in other words, such as are necessary to be investigated, before the article of rent can, with the smallest degree of correctness, be ascertained. The original passage evidently carries no other meaning, than that the sum received by the landlord is not a criterion by which the rent of land can be estimated; and that, without ascertaining the amount of the public burdens, no precise opinion could be given upon the subject. What is said, however, is charitably considered as an excitement to discontent, though it might, with equal justice, have been alleged, that the mentioning such a thing as rent at all, proceeded from a similar motive. I shall extract what the surveyors say upon this head, leaving the public to determine the degree of candour possessed by the critic, when he examined this Section.

"It is difficult for us to say what may be the real rent of land. We could not, with propriety, push the farmer upon this point, when he was ignorant what use we were to make of his answer; and even where we got sufficient information of what was paid the landlord, we found there was a long train of public burdens, over and above, which could not be easily ascertained. There is, in the first place, the land-tax, which is uniformly paid by the tenant, and generally amounts to 1s. per pound upon the real rent. 2dly, The tithes, which are levied in so many various ways, that it is impossible to say what proportion they bear to the pound rent much depending upon the actual state of the farm, and not a little upon the character and disposition of the drawer. Upon arable lands, where they are annually valued, the payment of money may be from 5s. to 8s. per acre, in some cases more. 3dly, The roads, the expence of which to the tenant is about 7l. per cent, upon the rent. 4thly, The poor rates, for which no fixed sum can be set down. The lowest we heard of was 18d. in the pound; and the highest 8s.; but, from the very nature of the tax, they are continually fluctuating, and, since our survey was made, they are greatly increased. 5thly, The church and constable's dues, which are about 1s. in the pound.—From all these things it may be sup-

posed, that in many places the sums payable by the farmer to the church, the public, and the poor, are nearly as great as the nominal rent paid to the landlord."

That tithes are a public burden, will be evident to the weakest capacity, though the critic says that "an Irishman might perhaps be privileged for placing these among the tenant's public burdens, but not so a man of any other country." If they are not a public burden, affecting land, I should be glad to know what they are? They were originally imposed upon the proprietors of lands for the support of religion; and if, "through the lapse of time, and the waste of ages," they have, in numerous instances, been perverted to other purposes, still they are collected in virtue of the original grant or appropriation. It is a matter of no importance, that a very considerable proportion of them are *now* become private property, seeing that they were originally destined for a public purpose. If the proprietor of an estate chose to bestow the tithes thereof upon an abbacy or monastery, and Henry VIII., in his sovereign pleasure, thought fit to suppress that abbacy or monastery, and to gift away the revenues to one or other of his favourites, does that alter the question? No; it only proves, that Henry VIII. did an unwarrantable deed; for, if the public good required the suppression of the abbacy or monastery, the tithes granted for its support ought to have reverted to the original proprietors, as the public establishment, for whose sake they were bestowed, was abolished and removed. If this had been done, they would then, in strict terms, have become private property; but as they were gifted away to others (right or wrong, I do not presume to enquire) they are still collected in virtue of the original destination, and consequently cannot be considered in any other light than as a public burden, though the religious houses, for whose benefit they were bestowed, have long ceased to exist.

Without entering upon the merits of Sir John Sinclair's letter to the surveyors, cautioning them to avoid discussing the expediency of tithes, which, as might be easily shown, cuts two ways; it is sufficient to say, that the critic's opinion seems to have been formed more from what was stated in the quarto edition, than from any thing contained in the copy then before him. He says, "so inveterate however is the enmity of these men against tithes, which they never paid, that they cannot forbear to inveigh against them upon every oc-

casion that can be found." I shall not here lay any stress upon the circumstance, that not above thirty lines of the Survey are occupied upon this subject, though it is not the best proof of the critic's accuracy; but I must express my surprise how he could for a moment suppose they ought to have preserved silence, merely because they were not personally interested. The very same reason might be urged against every opinion they have offered; and, unless the critic can prove, that his interest would be lessened by an abolition or commutation, his advocating the cause may be deemed as an instance of impertinence, even upon his own principles. Be this as it may, I consider the conduct of the surveyors, in yielding so far to Sir John Sinclair, as to decline investigating the expediency of this tax, burden, property, or call it what you will, as the most reprehensible part of their behaviour. I believe it proceeded from personal respect to the worthy Baronet, who, I suppose, had pledged himself to procure their silence.

The subject is again touched upon in another part of the review, when the breaking up of old grass-land is under consideration. The surveyors say, p. 115. "Before any of these rich fields can be broke up, the tithe-system must undergo a change, as it would be a notable affair for the tithe-holder to have a *tenth* of the weighty crops they would produce. From respectable authority we learned, that the payment of tithes were, in a great measure, the cause of laying these fields totally in grass, and that this tax continues to operate as a prohibition against breaking them up."—Upon this passage the critic observes, "The more weighty are the crops with mere breaking up, the more reason has the farmer to be satisfied with the payment of tithes, that is, of his neighbour's lawful demand." Softly, my dear sir, it is the interest of another party that is here concerned, whom you totally forget, and that is, the proprietor. If he cannot get a great deal more rent for such land, in consequence of aration being introduced, than when it remained in grass, it would be bad management to expose it to waste and deterioration. Take the rent of the old pastures, such as are alluded to, at 50s. per acre, and the crop at 50 bushels, the tithe thereof would amount, at a moderate computation, to 30s., which, added to the grass-rent, would make 4l. Sterling per acre, leaving little room for further augmentation. The proprietors therefore prudently suffer the land to continue in grass,

rather than expose it to the hazard of being injured by the plough, when the chief benefits would be gained by a species of persons who are neither owners nor possessors of land, nor bear any share of the expence attending the cultivation of it.

The *road-tax* (statute-labour) is stated to be 7l. per cent upon the rent, and, if paid according to law, it must now be more, though the reviewer says, "it seldom exceeds 2½ per cent, and cannot exceed 5l. per cent." By law, it is six days labour of a team of 3 horses and 2 able servants, for every 50l. rent, with an assessment of 6d. per pound upon the rent, or more, if the justices see necessary. Now, let any person, acquainted with the value of labour, say, whether these will amount to 7l. per cent, or not. Reviewers are not the best hands for computing the value of labour; indeed it would be unreasonable in the extreme to expect accuracy from such people, upon subjects with which they, of course, must be wholly unacquainted.

The observations made upon the *poor-laws* next come under the critic's animadversions, and certainly, if scurrility, be the commodity he deals in, a good deal of it is here vended. The defect of those laws has been so long and so universally acknowledged, that it is truly wonderful he should feel so sore, when the grievances of the present system are slightly commented upon. Very few people will be found that wish these laws to be perpetuated. They were perhaps constructed upon salutary principles, when first enacted, but the state of society is now so materially altered, that the wisest persons in the nation agree that a change is necessary, though they may differ respecting the amendments that are required.

I have looked into the survey, and perceive that the leading sentiment of the author upon that branch of the work is, that the burden of supporting the poor ought to be sustained by all ranks, in direct proportion to their abilities. This is such a just and equitable principle, that I can hardly conceive what kind of arguments could be offered against it. The reviewer gives none. He indulges himself in petulantly carping against some instances of their administration, not given upon the author's own authority, but from the information of an intelligent and respectable gentleman in the district. The poor-laws of England are so complicated, that even legal practitioners hardly understand them; therefore, if what is stated respecting their general administration was in any part defective, the error might have been pointed out

in decent terms, as candour might have suggested that a failure in facts might happen, without blame being attachable The following quotation from Mr Pitt's celebrated speech, February 16th 1796, upon this very subject, will effectually shew that the author has great authority upon his side, when he pronounced the English system of poor-laws to be incompetent with the original object, and inconsistent with the present state of society in that country.—

"That the poors laws of this country, however wise in their original constitution, had contributed to prevent the circulation of labour, and to substitute a system of complicated abuses in room of the evils which they humanely meant to redress, and, by engrafting upon a defective plan defective remedies, they produced nothing but confusion and disorder. The laws of settlement prevented the workman from going to that market, where he could dispose of his industry to the greatest advantage, and the capitalist from employing the person who was best qualified to procure him the best returns for his advances. These laws had at once increased the burden of the poor, and taken from the collective resources of the state, to supply wants which their operation had occasioned, and to alleviate a poverty which they tended to perpetuate."

If the above extract is compared with the general spirit of the section on the poor laws, it will appear that the difference of sentiment, if any, is but small; and yet the critic stigmatises the survey, as "calculated to produce in the minds of farmers, a rancorous hatred of the existing laws." I believe the author would disdain to shelter himself behind Mr Pitt, or any other authority; but when people of talents and information hold similar opinions, it is a proof that he is not so far mistaken as the reviewer attempts to make the public believe.

I have just another observation to offer upon this intemperate review. In the concluding paragraph, it is said: "If the people in England, in general, and farmers in particular, are not excited to a strong and active hatred of land-owners, for refusing to grant long leases; of the clergy and impropriators, for receiving what is due to them by the laws of their country; and of the Legislature itself, for not removing all inconveniences respecting the poor; which, however, they have incessantly studied to remove;—assuredly it will not be for want of encouragement from the surveyors employed by the Board of Agriculture." It is certainly a strange misap-

prehension of terms, to say that the farmers are excited to hate their landlords, because the utility of leases is insisted upon, and some other defects pointed out in the agricultural system. Does the critic know, that the interest of the one is as much promoted by granting leases as that of the other, and that no estate whatever can be let at full value, unless the security of a lease is granted to the tenant? It is a surprising circumstance, that while no attempt is made to refute the doctrines inculcated by the author, his conclusions are condemned in the most unqualified terms.

Having already taken up so much of your room, I can only just glance at what is stated by the Monthly Reviewer, concerning the same work.

This gentlemen has generally no objection to clear the ground of *quickens*, and has frequently committed himself when reviewing similar publications. He is friendly to leases, an enemy to tythes, and in short, holds opinions upon rural reform, very like those which run through the West York Survey. At this time, however, he drops his principles in the back ground, and comes forward to join in the attack against that unpopular work.

He accuses the surveyors of "being influenced by absurd timidity," because they did not think proper to state the annual value of the Duke of Norfolk and Lord Fitzwilliam's estates; but I am persuaded, that if he was acquainted with them, he would confess that "timidity," is not one of the sins that most easily beset them. Perhaps the author did not know the rentals of these Noblemen, therefore attempted to get off with an excuse. Be that as it may, the value of an individual's estate is unimportant in such a work, further than to gratify curiosity. Many sections were marked in the Board's *improved* plan, to which the attention of the surveyors was not originally directed, and they were necessitated to fill them up in the best manner they could.

"The Survey," it is said, "was confessedly made in haste," merely because five weeks were employed upon the business. Does the reviewer know any other district, Lincoln excepted, where so much time was devoted to the gathering of materials; or did he examine the route taken, or the abstract of the intelligence procured, when he formed this opinion? It is not the number of days and weeks, that were spent, but the manner in which they were employed, that ought to be considered; and, with common diligence, the period occupied is sufficient to form a tolerable notion of the

principles and practice of husbandry in any district: for it was not a minute detail of every man's system, but a general view of agriculture that was wanted. If hearsay evidence, (I suppose he means the information transmitted to the surveyors, by gentlemen resident in the district) is not to be received, in what light are we to view the numerous books of travels with which the nation is deluged; for certainly the authors of them never personally witnessed many of the events they detail, nor visited every place which they describe He adds, that the survey is "crude and indigested." If by *crude*, he means *imperfect*, then there is not a perfect survey yet printed, nor will such a one be executed upon the present plan, which embraces more objects than are in the power of one man to accomplish. If by *undigested*, he means *confused*, then he must give me leave to say, that, so far as respects arrangement and precision, this work will bear a comparison with most of its neighbours. In point of composition, it is more vulnerable, though I don't consider, that to be the test by which an agricultural publication is to be tried. The apology offered in the introduction, might in this respect have gone far to have satisfied every mind not resolutely bent upon finding fault.

"Distance from the press, and a crowd of other avocations, prevented that correctness of composition, which is to be found in several works of the like nature. But perfection in composition is not to be expected from those engaged in the *practice* of rural science, nor will the want of it be laid to their charge as a crime. According to the reverend Mr Harte, "the plain "practical author pays his little contingent to the republic of "knowledge with a bit of unstamped real bullion; whilst the "vain glorious man of science throws an heap of glittering "counters, which are gold to the eye, but lead to the touch-"stone."

I shall conclude these strictures, with an extract of a letter from a friend who was employed under the Board of Agriculture in the great work of surveying the kingdom. "The London periodical publications," says he, "in general are conducted by persons who have a very superficial knowledge of agricultural subjects, and in whose reviews I have often noticed the most absurd remarks—they have no idea that any thing good can come from the *other side Jordan*, and every

practice contrary to Norfolk, Kent, Essex, or Hertfordshire, is with them considered as downright *heresy; such hereticks* as *you* and *I*, who *dare to think for ourselves*, and make known our own sentiments, are no doubt thought deserving of being converted into bonfires;—however I hope we are both the disciples of truth, which may for a time be obscured or kept under by prejudice and ignorance, but in the end will prevail, though, in the meantime, we have to contend with the *Beasts at Ephesus*."

I am, Yours, &c.

VERUS.

FOR THE FARMERS MAGAZINE.

Review of the Comparative Statement of the expence of Oxen and Horses for Farm-labour, given in the Northumberland Survey. Vide p. 428. vol. 1.

As the authors of the Northumberland Survey, reviewed in your fourth number, appear to have very much undervalued the expence of keep, both of oxen and horses, I have sent you an attempt at a new estimate of both, on what seem to me truer data.

Expence of an Ox for one year.

Summering on grass, being the customary payment for a cow, - - - -				L.	3	10	0
¼ of an acre of tares during summer, at 5l. -					1	5	0
Wintering, on straw - -	L.	1	10	0			
½ an acre of good turnips, at 5l. -		2	10	0			
		4	0	0			
If on hay, 200 days, at 8d. -		6	13	4			
Half of this, as the average expence, -		10	13	4	is 5	6	8
Interest, harness, shoeing, as per Survey -					1	5	0
Total -					11	6	8
Deduct supposed increased value of the ox -					1	6	8
Gives the annual expence of one work ox -					10	0	0

Hence, the 1st year, with 8 oxen, will cost	L. 80	0	0
The 2d and 3d years, 6	120	0	0
Expence of three years,	L. 200	0	0
Average for one year	L. 66	13	4
To which must be added the expence of a driver, which I cannot estimate, including wages and victuals, below	14	6	8
Gives the total annual charge of each ox plough	L. 81	0	0

Expence of a Horse for one year.

Summering on grass, 165 days, at 6d	L. 4	2	6
Vetches or tares, as for the ox	1	5	0
Straw for half the winter, at the same rate with the ox	0	15	0
Hay half the winter, or 100 days, at 8d.	3	6	8
Oats, 70 bushels, at 2s. 3d.	7	17	6
Harness, shoeing, and annuity, as per Survey	3	5	0
Annual expence of one horse	L. 20	11	8

Hence the annual expence of a two-horse plough will be 41l. 3s. 4d. leaving a balance in favour of horses for farm-labour, and against the use of oxen, of 39l. 16s. 8d. for each plough. The ploughman is not charged in either, being the same in both.

In the strongest soil, the improved *swing plough* can never require more than three horses, and that only for once ploughing, in particular seasons and situations. Suppose three required for half the year, and with a driver, this would add 17l. 9s. 2d. to the expence of each horse plough in such stiff soils, still leaving a balance of 22l. 7s. 6d. against each ox team.

Extending this comparison, with the authors of the survey, who suppose 5000 ploughs in Northumberland, and, allowing Great Britain and Ireland to contain forty times the extent of tillage land in Northumberland, the two-horse ploughs give a difference of nearly six millions Sterling annually. Supposing half the ploughs to have three horses, the difference would be nearly five millions. In such years of scarcity, the difference would be more than double.

It must, however, be observed, that the above comparison is made with the improved swing plough, and will by no means hold good with the extravagant horse-teams so prevalent in the south, which are more expensive even than ox-teams.

It would go a great way towards lessening the danger of future scarcities, to devise a means of introducing the swing plough universally into practice. Perhaps a tax, increasing annually, upon all ploughs drawn by more than two, or at most three, horses, would answer the purpose. A similar tax on boats constructed of hewn timber, very speedily introduced the saw into Russia.

The *second* calculation respecting the value of produce, by using ox-labour, comes much nearer mine, than the direct estimate of expence. Had the authors allowed nearer the average-price, the difference would not have been very material.

They calculate directly, the loss on each ox-team,	L. 8	3	0
Estimate of loss of produce by each, is	27	13	0
My calculation with two-horse ploughs,	39	16	8
Ditto, with three horses,	22	7	6
The average of the whole is	24	10	7½
And, leaving out the first, as greatly too low, the average will be almost	30	0	0

Upon the whole, the loss to the farmer, in the first instance, cannot be under 25l. annually for each ox-plough team *. And it may be worthy of remark, that the whole of this loss must ultimately fall upon the landlord and the community.

Rrrr.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Review of the Form of a Lease and cultivation-Table given in last number, p. 12.

GENTLEMEN,

The utility of restrictive covenants has been questioned by many experienced agriculturists, while their necessity is keenly urged by various authors, chiefly of the description stiled in England "*land-tasters*," whose interest in all pro-

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* We humbly recommend the above observations, together with the comparative statements between horses and oxen, for the purpose of the draught, presented in the Northumberland survey, to the consideration of those members of the legislature who supported the bill for taxing farm-horses, solely because it would operate as a premium in favour of oxen.

N.

bability would be lessened by simplifying the tenure whereby land is generally possessed. Some of these gentlemen affect to consider the tenant as the most unfit person in the world for arranging the outlines of farm-management, therefore, very kindly tie him down to follow out rules which they, in their superior wisdom, think most suitable for the cultivation of the land temporarily entrusted to his care, otherwise, they sagaciously conclude that he will not only ruin himself, but also injure the interest of the proprietor.

Practical people, or, in other words, those who are acquainted with the minutiæ of husbandry, and the difficulty of adhering to a strict rotation in this variable climate, usually view restrictive covenants in a different light. They are satisfied that no improvement whatever will be made in consequence of their imposition, unless they tend to promote the tenant's interest; and that, if he is endued with proper qualifications, he would follow out a judicious system of cultivation, whether rules are prescribed to him or not. The fact is, that the interest of the public, the proprietor and the tenant, are one and the same during four fifths of a lease; the latter cannot hurt the ground or mismanage it in a single respect, without hurting himself in the first instance; and this principle will operate more forcibly than the most ingenious and best devised restrictions. Perhaps a few protecting clauses are necessary during the last four years, so as the farm may not be thrown out of shape;—for a longer time they are altogether unnecessary, serving only to fetter the tenant, without benefiting the proprietor; the truth of which may be ascertained by an appeal to the condition of every district where discretionary management is permitted.

I am led to these reflections from perusing in your last number a letter from Ayrshire, signed J. W., accompanied with a Form of a Lease and Cultivation-Table, said to be adapted to the West country climate. Giving the writer full credit for his desire to promote improvements, I must say that the measures recommended are totally improper for accomplishing his object. The form of the lease seems entirely calculated to benefit one of the parties, or according to an ancient homely phrase, "*the fat is all gathered to one side of the pot*," while every particular connected with the comfort and welfare of the man who is to bear the heat and burthen of the day, is altogether neglected. The table is equally defective—It requires the tenant to do what it is physically im-

possible in many cases he can perform, consequently fully warrants a presumption, that, whatever are the qualifications of the writer, knowledge in practical husbandry is none of them.

The first thing that strikes me, in the form of the lease recommended, is that every obligation on the proprietor's part, to deliver the houses and fences upon the premises in good condition, are omitted, while the tenant is taken bound, not only to put them in proper repair, but also "to keep the whole houses, dykes, fences, gates, and gate-ports, during the tack, and leave the same in sufficient tenantable and fencible condition." If a tenant is so foolish as to agree to such a clause, no doubt, as he makes his bed, he must lye down; but is it handsome to include such prestations in a lease, characterized, as adapted to promote improvements? The writer describes the West country farmers, as "generally unacquainted with theoretical knowledge of farming," and thinks that, "from hard labour, straitened circumstances, and contracted prejudices, they only move and perform as they are impelled, like a machine or implement of husbandry." He certainly placed much dependance upon these things, or he would not have ventured to recommend such an arbitrary and unjust clause. Does he intend to better their circumstances or enlighten their minds, by imposing burthens similar to what Pharaoh of old laid upon the Israelites? If a landlord requires a tenant to leave houses and fences in a particular state, it is but fair and reasonable they should be delivered over to him, at his entry, in the like state; otherwise a burthen is imposed upon him, badly calculated "to rouse his activity, better his circumstances, or make improvements popular."

It may be remarked, that two obligations of a very different nature, are contained in the clause here commented upon. *Sufficient* and *tenantable*, according to common interpretation, are far from being of the same import. By the term *sufficient*, it is generally understood, that either a house or fence must be in good condition in every respect; whereas, *tenantable* is explained to mean no more than that the house must be habitable, and the fence capable of keeping in a beast.

I notice also, that the tenant is tied down to leave the whole dung made upon the premises in the last year of the lease, for the use of the proprietor, or the incoming tenant, without any allowance whatever being made him. If he enjoyed the like benefit at his entry, the obligation would be fair and reasonable; but as, in the case of houses and fences,

the slightest mention is not made of this circumstance. The writer is so much engrossed by what he thinks the interest of his constituents, as to forget in every respect, the object he had in view, viz. the extension of improvement; for certainly a depressed tenantry will never make a flourishing estate.

Perhaps the clause, permitting the landlord to exchange part of the land set, might be so operated upon, as to render a farm not worth the cultivating, and even what is said respecting liberty of working minerals, &c. without any limitation, upon paying surface-damages, might sanction the tenant's ruin, upon the supposition that the proprietor was capriciously disposed to haras him by such proceedings. I am aware, that clauses, similar to those now mentioned, are not uncommon in this country; but this is no proof of their utility. It has been well observed by Mr Donaldson of Dundee, in his Account of British Husbandry, that, unless the same freedom is given to farmers, as is enjoyed by merchants and manufacturers in the exercise of their business, it is needless to expect that improvements in rural science will keep pace with those in trade and commerce. The observation is just, though it is to be lamented that in practice it is so much neglected.

I hardly know what to say upon the clause binding the tenant not to 'overstock the pasture grass with cattle;' for, among the number of antiquated arbitrary leases of a neighbouring country, which I have examined, such an obligation is rarely to be found. If a tenant does not know what stock his grass can carry, he is certainly an unfit person to possess land. Besides, there are few points upon which people differ more than in the stocking of grass land: Indeed, when stock are upon the field, and a severe drought sets in, what would otherwise be a very moderate number, often turns out a real overstock. But what is the tenant to do in this case? He must either dispose of his bestial at such prices as can be got, or take his hazard of better weather. In a word, this clause would lay the foundation of incessant disputes. There can be no reason for prohibiting the keeping of sheep and lambs, unless it is with a view of preserving the hedges; and, under this supposition, a few dead thorns planted upon the inside of the hedge would effectually prevent every degree of danger from these animals.

If prohibitions against assignees and tenants were not so common, I would have asked your correspondent, Why the

tenant ſhould be ſtrictly bound not to convey his poſſeſſion to a third perſon? It has been generally underſtood, even under the common clauſe, that a tenant, in the event of his affairs being in a diſordered ſtate, might appoint a perſon to manage his farm for behoof of his creditors, till their debts were paid up; nor can I ſee any thing that ought in juſtice or equity to prevent him, unleſs he has denuded himſelf of that liberty. The fact is, ſuch a meaſure has been often reſorted to with ſucceſs, and, while the debtor has been ſaved from bankruptcy, and the creditors paid up, the intereſt of the landlord was not leſſened. Money laid out in the improvement of land is preciſely a mortgage upon the premiſes for a limited time. If the original poſſeſſor is unable to keep poſſeſſion till the mortgage is redeemed, it is conformable with the ſtricteſt principles of juſtice, that he may tranſfer his right to another, exactly in the ſame manner as is cuſtomary with heritable bonds, or mortgages of any kind upon landed property.

I ſhall now ſay a few words upon the Cultivation-Table. It appears that there is not one principle that runs through the whole of the table, except that two culmiferous crops are not to be taken in ſucceſſion. So far it is therefore right, as two white crops in general caſes is bad huſbandry, hurtful to the ground, conſequently injurious to the tenant. But to have made the table in any reſpect complete, (if we are to argue upon a proper table) the rotation of crops ought to have been uniform, *which is very practicable upon paper*. Now the number of diviſions in paſture is conſtantly altering; 1ſt year five diviſions are in paſture, 2d year only three, 3d year two, 6th year five again; and, in ſhort, the extent is varying every ſeaſon, which would occaſion the plough to be uſed more in one year than in another; therefore the tenant would have either too much or too little work, or be annually ſhifting his working ſtock, which is an inconvenience of great magnitude. The cutting the firſt crop of graſs for hay is alſo a reprehenſible practice, nor would the taking of wheat or barley, when the paſture is broken up, be an adviſeable meaſure. Oats, as a firſt crop, are always to be preferred. They are no doubt offered as an alternative to the tenant, though none are given him in other caſes where circumſtances more decidedly call for the exerciſe of diſcretion.

But the moſt palpable abſurdity in the whole table is to be found in the extent of ground required to be dunged, which manifeſts that your correſpondent is not an adept in practi-

cal husbandry; as for instance, in the 17th year, two divisions are to be laid down with dung, though only three divisions were in corn the preceding year, which would not produce dung adequate to the covering three fourths of one division, even at the moderate allowance of 14 double loads per acre. Suppose we include the dung to be made from the produce of the two divisions, carrying fallow crops, still a very great deficiency will remain. Besides, how ridiculous is it to oblige the farmer to dung land, and not to specify the quantity that is to be applied. Any extent of land *may be dunged*, but the manner in which it is to be done, is the principal point. Just the same observation may be offered upon every restrictive covenant. A tenant may be taken bound to fallow; but, unless the number of ploughings, harrowings, &c. are specified, the obligation will be found nugatory, for it is not in the power of a third person to compel him to perform these operations in a proper manner. The fact is, a slight fallow, at least upon some soils, often gives the best crop. The tenant may be restricted by covenants, and kept within a circle, but they will not cause him to make a single substantial improvement, that he would not have done under a free and open lease, if he knew his own interest.

We have just one thing more to notice. The clause declaring a failure in performance to be an *ipso facto irritancy* of the lease, is certainly badly calculated to promote improvements. Who would lay out money upon land, if a slight deviation from the cultivation-table (a circumstance hardly to be avoided in precarious seasons) were to subject the possessor to a summary removal,——I am

Yours, &c.

A Practical Farmer.

Another letter upon the same subject has been received from a worthy correspondent to whom we have repeatedly been under great obligations. We extract the following passages from it.

"The Ayrshire gentleman's thoughts on leases are of a different spirit from the rest of your Magazine, and I am glad to find that some one of your correspondents mean to animadvert upon them, as indeed there is great room and cause. The very proposal of confining to a certain round of crops is to be reprobated, more particularly in the present case, when the least alteration, however unavoidable, is to carry *loss of the lease* along with it. But I do not mean to encroach on

your correspondent's province, by entering into a detail of all its follies, inconsistencies, and oppressive tendency. I shall just notice two prominent indications of tyranny among the clauses of the lease. 1st, The poor negro of a tenant (for farmer he is not understood to be) is to take the whole houses and fences in their present state, (which for any thing that appears on the face of the lease, may be fit for nothing,) *and obliges* HIMSELF *to put them into proper repair, and to leave them at his removal in a sufficient tenantable condition!* and what grand recompence has he for all this outlay of money in building houses, and enclosing of land to the master, which, in his supposed feeble circumstances, would, a thousand to one, run his nose into the ground at the very first? Why, (and it was shrewdly foreseen by the drawer of the lease) in case he becomes bankrupt, his very *creditors* are to be deprived of their share of the improvements made at their own expence; the whole is to be swallowed up in the capacious mow of the *master!* not a bodle to the poor white negro, nor to a creature who may have countenanced him; as indeed they must have deserved, for their simplicity in giving credit, in a case where it was previously engrossed on stamped paper, that no creditor could have a claim to be reimbursed of any thing; for, by other strong restricting clauses, the hypothec is to extend to, and include all the master's claims. I wonder it is not covenanted that the poor slave should be liable to corporeal punishment, like to his black brethren in the West Indies.

One observation more, and I have done. The *Agricultural Illuminati*, i. e. land-doctors, set always out on this *broad*, and as they think, *sure* ground, that the whole race of farmers or tenants, (or slaves if ye will) are declared enemies to land, landlords, and every thing about land; they therefore very consistently wish to see them bound hard in *fetters and in iron*; and as this evil opinion, like all other bad notions, is wonderfully productive of bad conclusions, so the very means they take to correct it, only tend to foster and perpetuate the evil they wish to avoid.

PART III.

Agricultural Intelligence.

If seasonable aration, and a dry seed-bed, were circumstances which insured a good crop, we might safely prognosticate that the two years of scarcity, with which this country has unhappily been visited, will be succeeded by a year of the greatest abundance. The ground has uniformly wrought well since last autumn. The wheat-seed was finished in a husbandman-like stile, and the young plants, almost in every case, have a promising, though not a forward, appearance. The spring grains have been equally fortunate. The soil was well made by frost, and harrowed in an easy manuer. The weather was favourable, neither too dry nor too wet, and permitted every operation to be executed with a degree of perfection, utterly attainable last year under the most active management. While gratitude for this comfortable prospect should fill the minds of all, let it be remembered, that the after season chiefly regulates the productiveness of the crop. If a temperate summer succeeds such a favourable spring, there will be every cause to hope, that the public distresses will be considerably alleviated, though, from the exhausted state of the country, it cannot be expected that they will, in one year, be altogether removed.

From the large importation of foreign grain into every part of the kingdom, no real want has been hitherto felt, though prices, especially for wheat, have exceeded those of last year; but as the home grain, from the scarcity of fodder, will, this year, be sooner threshed out than commonly happens, a continuance of foreign supplies will be indispensibly necessary till the new crop is harvested. In several parts of Britain, the stack yards are nearly empty, and the staff of life will, in a short while, be found only in the hands of the corn-dealer.

The markets, for both fat and lean stock, have likewise rapidly advanced, and threaten to go equally high as last year.

This is owing to the stoppage of the distilleries, and the partial failure of the turnip crop, which have produced a scarcity of fat cattle and sheep; while the deficiency of fodder occasioned such numbers of half-fed beasts to be slaughtered in the beginning of winter, as renders lean stock difficult to be got, now when the grass season is approaching.

The bill, prohibiting the manufacturing of wheat into fine flour, passed last session of Parliament, commonly called the "*Brown bread act.*" has been already repealed, and, in our opinion, the repeal was founded on cogent motives. We never could discern in what respect a bushel of wheat could be considered as containing a greater portion of nutritive substance when manufactured in one way, than in another; though we acknowledge, that, by rendering the article unpalatable, a given quantity might thereby be made to supply the public consumption for a longer time. This was perhaps the object of its supporters, though, when a trial was made, the public were not satisfied with the measure. Besides, it did not produce such a reduction of the price of bread as was expected. In fact, fine samples of wheat were enhanced in value by its operation, while the inferior sorts became a mere drug, as they were unfit to be manufactured in the manner directed by the act. The trade was thus thrown into confusion, the public were universally dissatisfied, while no benefit whatever was derived from a measure rashly adopted, but prudently given up, when its non-utility was ascertained by the evidence of facts.

In those times, when the fostering hand of the Legislature ought rather to be exercised in supporting and countenancing Agriculture, it gives us pain to observe any step taken to tax the produce of the ground in an indirect manner. We allude to the bill for imposing an additional duty on farm-horses, which, joined to the old duty, will levy a sum from the farmers of North Britain, equal to one half of the whole land-tax. In fact, it is just the same thing as if that tax had been raised to six shillings in the pound, instead of four; for, if the possessor is subjected to a burden, which he cannot transfer to the purchaser of his commodities, it must, at the long run, fall to be deducted out of the rent. Who ever heard of a government that taxed the

shuttle or the *hammer?* and yet these two implements might, with as much propriety, be taxed as the *farmer's horse.* The farmer can no more transfer the burden to the consumer, than was practicable in the case of the shop-tax; yet the inability of the shop-keeper was held to be a relevant argument when the tax was repealed.

The principles upon which this additional duty was supported, to-wit, that it would encourage the employment of oxen in preference to horses, will be found altogether unfounded and non-effective. Did the triple assessment of 1798 cause a single ox to be used in farm-labour more than was formerly employed? Without enquiring whether these were only the *ostensible*, and not the *real* reasons for enacting this tax, it may be added, that, if the tax was encreased tenfold, a horse would still be the preferable animal for farm-labour, and the cheapest, both in a public and private point of view. Since the Revolution, till lately, it was the policy of this country to encourage the plough, by granting bounties upon the exportation of grain; but now, when the produce of the kingdom is confessedly unable to supply the consumpt of the inhabitants, a burden is imposed upon the agricultural interest, which, one year with another, will far exceed the sums formerly paid by way of bounty or encouragement. We forbear to add more, the subject being so plain as to require no illustration.

Extracts from Original Correspondence.

AMERICA.

Extract of a Letter from a Gentleman at Philadelphia, dated December 26th 1800.

This is far from being a good farming country, the soil being generally very poor, and the crops much inferior to those raised in Britain, while the expence of labour is so high as to render land of little value. The Dutch people are best qualified for agricultural affairs in this quarter, as they make their own cloaths, spend little or nothing, and are Jacks of all trades.

It is not unusual for them to travel from 60 to 400 miles to market with their farm-produce, in waggons. They bring provisions along with them, make fires on the road for cooking their victuals, and, when in town, lodge in the waggons, while the horses stand in the streets. In short, they don't expend a farthing when from home, but carry the whole money received for their commodities away with them; which is the only plan in this country, where labour is so dear, and produce, in ordinary seasons, of comparatively small value.

It is the opinion of many well informed men here, that if Britain was to stop trade with this country, grass would grow in the streets of Philadelphia, for no goods are used but what are of British manufacture; nor is it possible, while labour is so dear, that manufactures can be introduced. Indian corn is the usual food, both of man and beast, which enables the people to export a considerable quantity of flour; but, as I said before, the crops of grain are very trifling, and I have seen many thousand acres which would scarcely return the seed.

Six fine calves were lately killed in this market, which cost 190 dollars, besides 10 dollars more for expence in bringing them here. They had sucked 23 cows during 18 weeks, then got Indian corn and Timothy. Their weight was about 60 lb. per quarter, which was a rare thing, as veal in this country is worse than I have seen it in any other place, being the colour of horse flesh, and generally sold at half a dollar per quarter. The current prices of the necessaries of life, are, wheat 15s. rye 6s. oats 3s. barley 6s. to 7s. 6d. Indian corn 6s. beans 6s. all per bushel; beef 4d. to 7d. veal 4d. to 10d. pork 6d. Mutton 5d. to 12d. all per lb.; turkies, weighing 8 lb. 4s. ducks 2s. to 3s. each, chickens 10d. and 12d.

The implements of husbandry are bad; the plough generally used is called the *bar-shoe plough*, from having a bar of iron from the share to the land-stilt, with a bolt through the bar into the beam. They have also another plough called the *chip plough*, much like the Rotheram plough, but worse executed. An implement for cleaning corn land is also used, called the *shovel plough*, but it is not worth noticing.

The rate of labour in summer is a dollar per day, and a pint of spirits, which cost 5½d. and for mowing an acre of grass 1¼ dollar, with spirits, is paid. It is a hazardous business to raise crops of corn, if the farmers have not people under their command, for cutting them. There are numbers of acres of Indian corn still unreaped for want of hands, which ought to have been bladed and toped in September: the fodder, when then preserved, is fine, and beyond any hay. Planting seems to be the forte of this country, I mean tobacco, Indian corn, &c. From the severity of the winter, sheep cannot be profitably reared, as the keep in that time is generally more than

what they will bring in the spring. The fleece of wool is from 2 to 5 lb., quality tolerably fine; but, from the circumstances stated, Britain is in no danger of being rivalled by this country, in the manufacture of woollens, for a long period. The cattle are generally of an useful sort, something like the English breed. Horses are of a hardy nature, but not so strong and heavy as in England. Indeed, the large breed could not subsist here during the hot summer months. As to the climate, there is neither spring nor fall, all winter or summer, either burning heat or piercing cold, which prevents all kind of farming and planting, from the 1st of January to April. The weight of barley is about 45 lb. and wheat 50 to 56 lb. per bushel. The malt-liquor is commonly bad in quality, and the brewing business is conducted very improperly.

The better sort of people in this country, are agreeable and well informed, but the lower ranks are rude and uncivilized, in the greatest degree. They plume themselves much upon their freedom and independence; but, in my opinion, it is the most dependent country in the world, for every comfortable article must come from other parts. Englishmen are called proud and overbearing, and are not loved in America; but this proceeds from envy; for, I consider England to be as much pre-eminent over all other countries, as the head is over the body. The more a person reflects upon the state of society in different countries, the readier will he be to coincide with me in this sentiment.

☞ *We suspect our correspondent has fallen into an error respecting the prices of grain; for, in another part of his letter, he states the dollar at 7s. 6d., which is a proof that Sterling money is not meant.*

SCOTLAND.

Extract of a Letter from a Gentleman in Aberdeenshire, March 9th.

The mild winter has been very favourable, both for ploughing and for employing day-labourers. I have felt it to be my duty to give employment to as many as I could, of that useful class of men, who were in want of bread, and too high-spirited to receive charity; and being long since satisfied, that it was impossible to establish liberty and equality among men, or, indeed, among any species of animals, I have been attempting, as far as I could, to establish it among vegetables. With this view, I set my labourers to work on a field of *four* Scotch, or a little more than five English acres. The soil was in ge-

metal a light loam; and the whole field had borne a crop of oats last season, after lying some years in sown grass. But the upper part had been taken out of moor about 15 years ago, (some of it as early as 1779) and was covered, at an average, with only five inches of soil, in many places not above three inches; while the lower part was old in-field or croft-land, at a medium, 20 inches; and in the hollow between the old ridges, now levelled, not less than 2 feet 4 inches deep. In the former part of the field, owing to the very dry season, though the ground was clean and in good order, I had not 3 bolls of oats per acre. On the latter I had a very good crop, although, in moist seasons, the corn on that part was apt to lodge, owing to the great depth of the soil. I have now trenched about three acres, both of the very deep and the very thin soil, and have left out one acre of the croft land, on one side of the field, which is of a moderate depth, for the operation of the plough. While the labourers in the lower part of the field were assisting my servants in filling into carts the super-abundant soil, leaving only a depth of about 14 inches, those in the upper part were employed in piercing with a mattock (provincially called picking) the subsoil, or hard tilly channel; and, (after the carted soil was poured upon the trench thus picked or pierced,) in levelling the cart heaps, and in throwing above them the thin soil which had been both cleaned and limed some years ago, and was in a state of vegetation. For I considered it as a matter of importance, that the dead earth should not be laid above the ground, though this would have lessened the expence. In accomplishing this revolution in the vegetable kingdom, I have completely got rid of *those despots called large stones*, whose tyranny over my grounds had been of longer standing than the race of Capet, or even of Charlemagne, and which had broken many a plough to the industrious farmer; and, by green crops and fallowing, I had greatly humbled, and this year hope to extirpate those *aristocrats called weeds*, which had often choaked my crops, and injured both the liberty and the fruitfulness of my soil. In plain English, my ground will be free both of stones and weeds, and is now worth more than double rent. The medium distance from which the deep soil was driven to the thin part of my field, was 80 yards, the field being nearly 180 yards in length, of which the very deep soil occupied the lowermost 40 yards. The whole expence, as nearly as could be calculated, was about 6l. per acre, independent of the value of lime and dung, which must this season be laid upon the land. But, besides the pleasure of giving bread to eight or ten poor families in the winter months of a calamitous year, in which they could find no employment, I have got my whole field cleared of stones, and, instead of the former inequality of

soil, it is now at the medium depth of from twelve to fourteen inches.

As I intend to devote this field, for the ensuing summer, to the purpose of experiments in agriculture, it may be proper to mention what crops I propose to raise on it; and I shall be much indebted to you, or to any of your intelligent neighbours, for any information that can render my experiments either more successful, or more generally useful. I propose to plant a row of potatoes in the hollows between the trenches, which are a Scotch ell, or $3\frac{1}{10}$ feet distant, and to draw the earth over the young plants when they first appear, and gradually to the stems when they require it. Between these rows I wish to sow or plant, carrots, parsnips, turnips, ruta-baga, root of scarcity, salsafy (tragopogon porrifolium) and different kinds of beet and cabbages. My ground is in such a state, as that horse hoeing is unnecessary. I shall now state my reasons for making these experiments, where I aim at something more than the mere quantity of these different crops.

It has long been my opinion, that, both for preventing the danger of a scarcity, and the use of foreign or smuggled spirits, by having a great supply of vegetables fit either for human food, or for distillation, the rectifiers still should be supplied principally from green crops, and that no more malt, or indeed any other kind of grain, except in plentiful years, should be used in distillation, than what was necessary for properly fermenting the wash. If my experiments succeed, if the scarcity shall be removed by a plentiful crop this year, and if I obtain permission to distill all of these different kinds of roots, which I find to be fit for distilling, I shall be able to determine pretty accurately their different comparative values, and also the quality of the different kinds of spirits, which can be distilled from any one of them, or from a combination of two, three, or more kinds of these roots. I have distilled both carrots and potatoes with success, under the authority of the late Committee of the House of Commons, on the Scotch distillery. Carrots, without being rectified, make an excellent spirit on being twice distilled: potatoes also make a pure ardent spirit, which is much improved by a third distillation. Turnips make a coarse spirit, when distilled by themselves; but I am not prepared to say whether they may not, when combined with other roots, produce a spirit that is both wholesome and well flavoured. Sugar has been made with great advantage from one species of beet: and, it is highly probable, that ardent spirits can be made from *mangel worsel*, and all the species of the beet tribe.

If I do not receive permission to distil them, or if the next crop shall be such as renders them necessary for the food of

man, I shall in either case be satisfied that I have made the experiments, and have given employment to some industrious people, at a time when work was so scarce, and provisions so dear.

Allow me now to call your attention, and that of the intelligent landed gentlemen and farmers, among whom your magazine is circulated, to this plan of giving staple to thin soil, and reducing to a moderate depth, the ground on which corn is apt to lodge, from its being too deep and of a loose texture.

With all the advantages of the plough, it must be remembered, that in a hilly country like Scotland, the soil of the higher part of the lands, is, notwithstanding the greatest care of the ploughman, and the most judicious method of conducting the position of the ridges, gradually carried away to the lower parts of a field: And, along with many recommendations of liming or marling ground, it is well known that the first liming, or first improvement by marle, is the most productive; because, after the soil is full of calcareous matter, a second operation by lime or marle cannot be successful. In the course of 20 years, it cannot be a great expence to give a complete trenching to a sloping field, and, by carrying some of the deep soil to the upper parts, to render the whole of a moderate depth; yet the advantages of this are very great. New soil is brought up by the trenching, and lime or marle may be applied with uncommon success. The sub-soil is loosened with the pick or mattock, which will be of great service for many years on a hard tilly bed; and the arable grounds ripen *at the same time*, when of equal thickness of soil. Nor should it pass unnoticed, that when a patch of moor or barren land lies close by a deep field, or very near a thick end ridge, a considerable quantity of such poor soil will be much enriched by covering it a few inches with the soil of old in-field or croft-land, and then mixing the whole by the plough. By this means, our arable lands may be rendered more productive, and increased both in their extent and value; at the sametime, a benevolent man can give employment, in the winter months, to several honest and industrious day-labourers.

I must observe, however, that the operation of thickening poor land cannot, with advantage, be carried much farther than to 100 yards, at a medium distance from the deeper soil. The difference between the expence of this and of common trenching with the spade and mattock, consists in the following articles: 1st, The filling the earth into a cart, instead of throwing it forward into the trench. 2dly, Assisting to empty the cart and levelling the cart heaps. And 3dly, which is the principal expence, The labour of a man and two horses in carrying the soil to the thinner part of the field. When this distance

is considerable, two men and four horses must be employed. From the experience which I have had, I can say, that the medium distance should not exceed 100, nor the greatest 200 yards, except where a farmer has two or more carts, and a little spare time. But I can attest, that the advantages of equalizing soil are very great, as I had the clearest evidence of this in 1796.

That year I employed a day-labourer to trench a small feu which I have near Aberdeen. The quantity of ground was only 62 falls 14 ells, wanting 1 fall and 22 ells of four square chains, or two-fifths of an acre. The lower part of the soil was nearly two feet deep; a hillock in the middle, shaped like a ridge, was, in some places, not more than two inches. The expence of trenching the whole, and of thickening the barren patch, was 48s.; and that of dunging and sowing turnip, including ploughing, was 2 guineas. I sold the turnips for 4l. 17s. or at the rate of 12l. 7s. 6d. per acre. Next year I raised 6 bolls and 1 peck of Aberdeen corn-measure, or 40 Winchester bushels and 1 peck of excellent bear; or at the rate of 13 quarters, or 103¼ bushels per Scots acre. I cleared above 6 guineas from my bear, from the very high price of bear meal; and I let the clover the third year for 4l. 17s. the same rate with the turnips. It therefore does not admit of a doubt with me, that, where ground is valuable, in the neighbourhood of towns, that land will pay the expence of trenching and thickening the shallow parts of the soil. Whether it shall repay my expences in the country, and about 14 miles distance from a sea-port, I do not assert; but, when my experiments are finished, I shall faithfully relate their success: at present I do not despond.

I would now mention a set of experiments which I made on the boulting of barley or bear in a flour mill in 1795, and 1796, and in 1800, and in the present year.

The first experiment was made on the old bear of crop 1794; and from it I obtained 36 pecks of meal or common barley flour, from the boll of bear, Aberdeen measure. The quantity I sent was only 12 stones Dutch, or 210 lib. English, and measured exactly half an English quarter, or nine pecks and 2 lippies and a half of Aberdeen corn measure. It was first shealed on the barley mill, then ground and put through a 16 shilling cloth, marked No. 400.; it produced nearly 21 pecks and a half, meal weight, or 187 lb. English, of common barley-flour, and 16 lb. of bran, 4 lb. of husks from the shealing, and 3 lb. lost or dried up in grinding and boulting.

The second experiment made with the same bear produced 37 pecks nearly of barley-meal, boulted through the cloth, No. 180, a bran cloth, or half guinea cloth.

I sent 6 firlots of bear, equal to 10 Winchester bushels, weighing nearly 532 lb. and a half English, or 30 stones 6 lb. Dutch. It was put through the bran cloth, after grinding, and produced 483 lb. English of barley meal, 3 lb. and a half of tails, and 40 lb. and a half of bran; lost in grinding only 5 English pounds out of 532 and a half.

In order to try how much barley-flour, equal to the finest wheat-flour, could be made from the half of this quantity, 241 lb. was put through the finest boulting cloth, a 23 shilling cloth, No. 490; the produce was 112 lb. 10 oz. English, or 1 cwt. and 10 oz. nearly 13 pecks meal weight, and 124 lb. of what the millers call sharps. These sharps were ground a second time, and boulted a third time, and the produce was 46 lb. of second flour of barley, (boulted however on the finest cloth) and there remained in the cloths 79 lb. of pollard, and above 5 lb. of tails. From this experiment, I saw there was a great waste of bear, in boulting it twice through a fine cloth, as the pollard and tails were only fit for poultry.

The third experiment was made with half a boll of new bear, dried in the midst of a heap of dry corn, or kiln-dried oats. When dried in this manner, an half boll of dried (about 8 pecks and a half of undried) bear weighed 160 lb. English. It was boulted as in the preceding case; and produced of the finest flour 71 lb., or half a boll and 1 lb.; but, after grinding the sharps, I took them home and sifted them with a common meal sieve, they produced 7 pecks of meal and 1 peck of sids. The meal resembled that which is made on a meal mill. Finding this meal much better than I expected, I resolved to make another experiment on a different plan.

I weighed out 54 stones Dutch, which I found to be almost exactly 3 Aberdeen bolls, or 20 English Winchester bushels; when dried on the kiln, it had lost 4 stones of its weight, and weighed only 50 stones Dutch, or 875 lb. English. Half of this quantity, or 437 lb. and a half neat, was put through the 16 shilling cloth; it yielded 369 lb., or nearly 42 pecks and a half, meal weight, from the 6 firlots of bear. This was sold at tenpence halfpenny per peck, and was at least a halfpenny better than any meal that can be made on a common meal mill. The other half, or 437 lb. and a half neat, was first boulted through the finest cloth, the 23 shilling cloth, and yielded 244 lb. English, or nearly 28 pecks of very fine barley flour, which was sold at thirteenpence halfpenny per peck. What remained in the boulting cloth, and is called the sharps, was ground a second time, and then boulted through the 16 shilling cloth. It was partly sold at eightpence per peck, in the mill or in the town, and partly brought home to my own family.

(None of it was carried to the market.) It weighed 120 lb. English, or nearly 13 pecks and a half meal weight.

This winter, I resumed my experiments on a larger scale, because the price of wheat had risen so high; and, as the flour mill at Gilcolmston, near Aberdeen, had received a most valuable addition of a wire boulter, where the first flour passes by a 60, the second by a 55, and the third by a 38, the sharps or small bran by an 18 inch thread, and the large bran at the end. I carried to this mill two quantities of bear, one of crop 1799, which was twice ground, and another of crop 1800, which was ground only once.—They yielded as follows:

1st Quantity, 307 lb. Avoirdupois.

First flour of bear, -	144 lb. English.
Second flour - -	32 lb. ditto.
Third flour - - - -	33 lb. ditto.
Pollard given to poultry -	60 lb. ditto.
Coarse bran for horses - -	32 lb. ditto.
Lost in grinding, or dried up -	6 lb. ditto.

2d Quantity, 32 stones Dutch, or 560 lb. Englifh.

First flour - - -	187 lb.
Second flour - -	108 lb.
Third flour - - -	116 lb.
Pollard - - -	95 lb.
Great bran - - -	47 lb.
Lost or dried up - - -	7 lb.

As the proprietors of this mill, from having much wheat on hand, could not grind more bear this season, I have carried several quantities of bear to *Justice-mills*, near Aberdeen, held in tack by James Smith, where I have uniformly had from 33 to 36 pecks of meal in the boll of bear, Aberdeenshire measure, weighing from 18½ to 20 stones Dutch; and, as the meal is sifted through a wire sieve, which has 16 wires in every lineal inch, I have from 30 to 35 lb. English, or nearly from 3½ pecks to a fifiot Dutch weight of bran for my horses.

In order to ascertain how much was lost by shealing and grinding bear on a corn mill, where bear is always shealed, or stript of its hulls, before it is ground in Aberdeenshire, I carried to a neighbouring mill in my own parish, 16 stones of dried bear, of the very same kind with what I had carried to Gilcolmston, and had 5 pecks less of bear-meal in proportion on that small quantity, than I had at the flour-mill; and, from examining the quantities yielded at several corn-mills of this county with what is got at a flour-mill, I find there is a loss of

never less than 10, and generally 14 per cent. by grinding bear on the corn-mills of Aberdeenshire, independent of the value of the bran, of which there is only about half a peck in the boll at the corn-mills in this county, though your machinery in the Lothians is better, and your corn-mills not so open as ours, where there is no partition at all between the mill-happer and the door of the mill.

I must also remark, that, while the pollard or small bran is excellent food for poultry, the great bran (consisting of the hulls and the dust, or coarse meal that adheres to them) when mixed with boiled potatoes, makes excellent food for horses. I have tried this mixture for six years, and I know from experience, that 4 lb. of boiled potatoes, and as much of great bran are sufficient at one time for a horse, save much corn, and give him a very fine skin; and it was from observing, that the tacksman of a mill, who was a horse-dealer, gave all his *mill ring* (i. e. the corn which fills the mill-stones when newly picked) along with potatoes, that I learned to mix the great or coarse bran with that valuable root.

After stating the above experiments, I proceed to offer a few observations.

1. As England cannot at present afford to give us wheat, we should use bear or barley as a substitute; this would keep money in Scotland and wheat in England.

2. Those who don't dislike the barley taste, should boult their bear through a 16 shilling cloth; this makes it much finer than bear-meal ground on a meal mill.

3. As barley, when baked with water only, becomes black, I would recommend it to those who live in the country, or who can get milk, to bake it with milk or cream. The finest barley cannot be distinguished by its taste from wheat flour, when made into sconns, only it is not so white; by baking it with milk, the difference of colour is no longer noticed.

4. If baked with loaf-bread, it should be made broad and thin, like a Christmas-cake; it answers best for morning rolls, baps, or sconns; and, when baked with milk and butter, it can be used for biscuit, bunns, and particularly for short-bread: It is always fit for children, being much lighter than oat-meal. And if the bakers once get into the way of baking it, their trade, even in good years, will be greater, and oat-meal and flour less used.

5. I see no necessity for mixing very fine barley flour with wheat flour; it occasions deceptions or complaints; and the barley requires more fire than the wheat in the mixture.

Extract of a Letter from a Gentleman near Kelso, March 23.

I shall be extremely happy to give you every information in my power relative to the state of husbandry and markets in this neighbourhood; but I beg you will attend, that, when I speak of the price of grain, it is always the Berwick boll of 6 Winchester bushels which is condescended upon. This is a necessary explanation, for the diversity among the measures of capacity renders the real price of grain imperfectly understood.

Our seed work, for spring wheat, beans, pease, and cold seed oats, is finished; and a considerable part of the hot seed oats are also put into the ground. The land was in the finest condition, and harrowed well; but last week the showers of rain rather damped the clay soils. I ought to have excepted the new, and, of course, fashionable variety, called *potatoe oats*, some of which, from an idea of their vegetating quickly, and ripening early, remain to be sown. Some fields of barley are likewise sown, and this grain will continue to be put into the ground as fast as the turnips are eaten or led off. It is my opinion, that there is not more land sown this season than usual; and this proceeds from the extreme high price of seed, which renders such fields, as will not produce more than three or four returns, not worth the sowing.

Our stack-yards, in general, are turned very thin; some are empty, and others nearly so; and, except upon Tweed-side, not much unthreshed grain remains. Several farmers, who used to have from five to ten stacks of wheat in their yard at this season, have only one or two, but the greatest part have none. In short, it is my belief, it will take Tweed-side to supply the home-consumption. With respect to beans and pease, we have not a sufficient quantity, and a good deal have been imported. Barley is a scarce article, and stands the price better than oats or beans.

During the throng of seed, prices of grain were extremely high, but oats and pease are now rather falling articles; wheat is from 105s. to 115s.; beans and pease 70s. to 75s.; oats 36s. to 48s.; barley 60s.; all per Berwick boll. Some of the early oats sold at 60s. at seed time; potatoes 20s. per boll; hay 18d. and 20d. per stone; straw 12d. but little of either.

Our markets for both fat and lean stock are equally high; beef 8s. and 9s. per stone English, sinking the offal; mutton currently 8d. per lb. pork, the same, and in few hands; veal 8d. and 9d. Owing to the quantity of turnips unconsumed to the southward, there has been a great demand for lean stock. Great ewes have also sold well, particularly those of the black-faced breed, which are thought to feed the best lambs.

It is wonderful indeed to observe the great and increasing rents paid for grass land; and yet I never met with a farmer who would own he made any thing by such undertakings. To my certain knowledge, several of these grass farmers lost 3l. per acre last year; nay, some of them were in such a scrape, that the whole stock upon the land was insufficient to pay the rent. Persisting in such concerns is assuredly something like madness: if it is not so, pray what is it?

Both cattle and sheep have fed well this season, and are fatter than common, which I attribute to the dryness and warmness of the weather, rendering the turnips richer than usual. There will be a great scarcity of dung; we are at least one-third short of our usual quantity. At Kelso, it has risen to 7s. the cart-load, and can, with difficulty, be procured at that price.

Extract of a Letter from Caithness, 21st March.

I have at this time little information to communicate, as the prices of grain are much the same as when I last wrote you. The weather has been uncommonly mild, which was much in favour of this county, fodder being so scarce. The bear and oat seed is begun in several places; for eight or ten days past, the labouring has been greatly retarded, by a severe storm of snow, but it is now mostly gone, except upon the hills, and we are looking for a fine seed time. Hay sells at 18d. per stone of 24 lb.

Dunkeld, 27th March.——The winter and spring season has been more temperate than we have experienced for 20 years past, till within this fortnight; but a change has taken place this day. We have not begun seed-work in this neighbourhood, nor in the vale of Athol or Strath-Tay; but, as the land all ploughed was in excellent condition, that important branch of husbandry will commence with vigour when the 25th March, O. S. arrives, which is the period generally adhered to in this district for putting the spring grain into the ground.

Our prices for grain and other articles of produce, are as follows:

Oats per boll,	34s. to 44s.	Beef	6d. to 8d. per lb.
Seed ditto,	40s. to 50s.	Mutton	7d. to 8d,
Barley ditto,	45s. to 50s.	Veal	5d. to 9d.
Oat-meal ditto,	44s. to 46s.	Cheese	6d. to 1s.
Barley-do. do.	28s. to 29s.	Fresh butter	1s. 6d.
Early seed potatoes,	2s. 8d. to 3s per two stone.	Salt do.	1s. 9d.
Late do.	2s. 4d. to 2s. 8d. per two stone.	Hay 6d. to 1s. per stone.	

Argyleshire Quarterly Report.

Our winter having been mild and open, with hardly any frost or snow, the cattle needed less provender than usual; and, by that means, much that would have otherwise been spent, has been saved for food to man. But what we have had of the spring has been much more severe than the winter, the weather having been generally both cold and wet. The ploughing is nearly in its usual forwardness, but the ground is so wet, and the weather so cold, that the sowing, which is not yet begun, will, in all probability, be very late. Little of the oats can be sown this year at the usual time in this country, which is from Patrickmas to the end of March, O. S. If our weather does not mend soon, the provender for cattle must also become very scarce; so that they must still have their share of the provision that was intended for man.

The market continues to be high. Oat-meal in general sells at 2s. 6d. the peck of 8 lb. In the district of Kintyre, where the weight is 10 lb. it sells at 3s. but is not easily got, as a considerable quantity was exported before it was raised to this price. Bear-meal is 2s. Bear 50s. per boll. Seed-oats 48s. Potatoes 5s. per barrel. Beef 5d. per lb. English. Beans 42s. to 45s. per boll.

From the exertions made by the landed interest to stop the illegal practice of distilling, and the fines laid on such as have been detected, less bear has been consumed in that way than is usually done; so that it is hoped the country may very nearly serve itself till the new crop arrives. The town of Inverary, which is surrounded by a tract of country that yields very little corn, has been supplied by the kind and fatherly care of the Duke of Argyle, with Indian corn and flour from America, of which His Grace has most liberally offered the town of Campbeltown a share, if it should be needed.

To the sheep-graziers or store-masters, who occupy much of the higher parts of the county, the winter has been very favourable; but if the present severe weather continues for any time, they must be great sufferers, as the lambing season is to them a very critical period. The herring fishing of this county has not been, this last season, so successful as usual, but the excess in the price will probably make up for the deficiency in quantity.

24*th March* 1801.

Ross-shire Quarterly Report.

The weather for these three months past has been, upon the whole, favourable to the farmer; though, from the 12th

to the 24th of this month, the frosts in the night, with frequent showers of snow, sleet, and rain, kept the ground in a state not fit to receive the seed; yet as it is now dry fresh weather, and as part of the oats and pease were sown in good order before the late unfavourable change, it is hoped the whole will be finished in good time. Wheats and sown grasses wear a favourable appearance; in some instances the former is too luxuriant. The openness of the season has been of much service in preserving the live stock. A great number of our cattle have been able to shift for themselves without provender of any kind. It is fortunate that ploughing in winter was so well attended to, as hay and straw are, with many, quite exhausted. The barley lands must, in general, be prepared by feeding upon grass, which will make the operation difficult for many. The state of the poor cottagers is now truly deplorable; for, though barley can still be had, it is at the enormous prices of from 46s. to 50s. per boll; and the trouble and expence of mealing it here is considerable. It is impossible for labourers, whose average-wages are 9d. per day, to provide for their families at these prices; and, what adds to their distress, many of them are out of employment, fewer hands being employed this season by the farmers than usual. Having stated the prices of barley, little more can be said on that head, as, in fact, we have neither meal nor any other grain for sale. Potatoes are nearly exhausted; many of the cottagers and small tenants have not been able to reserve seed for planting their patches of ground, which is absolutely necessary for their very existence. With these prospects before them, no wonder the idea of emigration should suggest itself, and flatter them with relief from such distress, in a foreign country. Numbers are preparing to go to America; about 400, besides children, in this part of the country, have already engaged to sail for that continent in a few weeks hence. Beef and mutton have been selling from 4d. to 6d. per lb. but very little is slaughtered in this county at this season for the public market. Drovers have appeared here earlier than usual, and have carried off the beasts in condition at good prices, but it will be some time before the bulk of our cattle are fit for the road.

March 27th 1801.

Berwickshire Quarterly Report.

The weather, during this quarter, has been singularly propitious to every branch of rural economy; whatever aid winter-pasturage could afford in eking out the scanty stock of straw,

has been obtained; notwithstanding which, the stack-yards in general never exhibited a more vacant appearance at this period of the year. Hay is comparatively more abundant, the mildness of the winter having precluded any necessity of foddering sheep from the hay-stack; the price since January has, in consequence, been upon the decline; the rate at present is from 14d. to 16d. per stone of 22½ lb. English.

Turnips have stood the winter without material injury, and have afforded an eatage fully equal to what their appearance in autumn indicated. The number of oxen fed, did not exceed the ordinary average; but, in addition to these, a great many young cattle were allowed a feed of turnip once a day, or oftener, which, while it prepared them for early grass, contributed also to the saving of fodder; the expence of wintering on straw alone being from 40s. to 60s. a-head. Some farmers likewise allowed their horses a few turnips along with the ordinary fodder, and seemed to consider them highly beneficial; but as no comparative trial has been made, the utility of this practice is not yet fairly ascertained.

Sheep, fed for the butcher, might be reckoned rather short of the usual compliment, an uncommon number having been taken off by the English jobbers in autumn. The season throughout has been remarkably favourable to stock sheep; ewes, in the lower district, are pretty far advanced in dropping lambs, but do not twin so well as usual.

A considerable proportion of the fat stock has already been bought up by the jobbers, and about the middle of March a number of lean cattle were also taken off at good prices, for the English pastures.

Winter wheats, and young clovers, have everywhere a most promising appearance, and early pasture begins to put on a fresh green.

A great deal of spring wheat has been sown, chiefly after turnip; the season having afforded opportunities of sowing, almost as soon as that crop could be cleared off the ground. Few pease or beans were sown till towards the end of February; oats sowing commenced with the fine weather which ushered in the month of March; and, as little or no ploughing remained to be done, and the land harrowed freely, several farmers, possessing dry soil, had completed their oat-seed by the middle of the month, since which, some fields of barley have also been sown; and though there have been snow showers during the last fortnight, which has retarded the harrowing upon wet grounds, yet, even there, the oat-seed is now drawing near a close. Upon the whole, the different field-operations have seldom been carried on under more auspicious circumstances than during this and the two preceding months.

Though the number of inclosures annually let by auction for pasturage, has increased this season, that circumstance has as yet had small influence in moderating grass-rents; from which, there is little room to suppose that butcher markets can resume their accustomed level for some time.

Corn markets have experienced a gradual advance, since the beginning of the quarter, with the exception of mealing-oats, which have dropped a little of late; seed corn has sold at high prices; a new species of oat, originally from Cumberland, has sold currently from 60s. to 72s. per boll of six bushels.

Market prices at Berwick, March 28th.

Wheat	100s.	to	110s.	Per boll of six bushels.
Barley	56s.	to	58s.	
Oats	35s.	to	36s.	
Pease	——	to	80s.	
Beef	6d.	to	8d.	Per lb. of 16 ounces.
Mutton	6d.	to	8d.	
Veal	8d.	to	9d.	

Pork, for the London market, 7s. 6d. per stone of 16 lb.
Butter 12d. per lb. and eggs 8½d. per dozen.
Oat-meal in retail has been selling at 5s. 6d. and 6d. per stone, Dutch weight.

While there is pleasure in remarking the judicious arrangements that have taken place, in the different parishes of this county, for supplying the industrious poor with meal at a reduced price; the sober, peaceable manner in which that useful class of the community have conducted themselves under the pressure of the existing scarcity, redounds much to their credit, and ought not to pass unnoticed.

In consequence of an order of the justices, grain *of all sorts* is in future to be sold in this county by the Linlithgow standard barley measure only, and an inspector appointed by them, is at present employed in adjusting the different measures to that standard; four bolls of which is nearly equal to three English quarters.

March 28th 1801.

East-Lothian Quarterly Report.

The greatest part of the current quarter has been remarkably favourable for conducting farm operations, and the manner in which they have been executed presents a striking contrast with what occurred in last unfortunate spring season. The ground has in general received the full benefit of ploughing, and, with

some partial exceptions, has harrowed in a free and easy manner. In a word, if a good crop necessarily follows a suitable preparation, there is every cause to hope that a return will be made to the labours of the husbandman, equal to his most sanguine expectations.

Prices of grain still keep up, though, unless it be in the article of wheat, they do not exceed those of last year at the same period, while the quality, unless it be that of oats, is greatly superior. Wheat is now a scarce article; few farmers have any quantity worth while on hand, and some have none at all. At this time, good wheat is worth from 72s. to 78s. per Linlithgow boll (about 3l. per cent above 4 Winchester bushels) but much of this grain being damaged by the autumnal rains, it is consequently of less value upon an average. Beans and pease have, for a month past, appeared in large quantities, and in no year have fuller markets of these grains been seen at Haddington, than during the months of February and March. The reason of this is obvious: bean and pease-straw is the customary fodder of the working stock; and, being short and of little bulk this year, a greater quantity of grain must necessarily be threshed out, before the portion of straw, required for the labouring beasts, can be made up.

Both fat and lean cattle, particularly the latter, have much increased in value; but the rise was easily foreseen by every person who reflected upon the state of markets at the end of last year: Fewer cattle being wintered than common, necessarily made more purchasers when the grass season arrived; and, in addition to this, an extraordinary demand from the south greatly encreased a scarcity, which, at all events, would have prevailed, though in an inferior degree.

Grass-parks, upon the whole, have not fallen in rent; some of them have even gone higher than last year, which is a sure proof that the extent of pasture-land is below the demand. We observe with surprise, in a memorial *lately published*, that the increase of pasturage is assigned as the cause why corn is so scarce, which certainly does not hold true, when applied to this county. At no period was less land kept in grass, though probably it might be for the interest of all concerned that the system, reprobated by the learned author of the pamphlet alluded to, was more extensively adopted.

Seed-work is far advanced, especially upon the coast side, and little obstruction has offered this season to that important branch of rural business. The winter wheat has a most promising aspect. About the middle of March, it was rather at a stand, but the late fine weather has effectually revived it. In a word, if the farmer had had the choice of a season, he could not have got one more to his mind, and it will give us much

pleasure to state in our next, that the present favourable prospect has been fully realised.

March 30th.

Mid-Lothian Quarterly Report, from January 4th to April 4th, inclusive, 1801.

It is with great satisfaction that we can continue to state the same favourable circumstances in the season, as in the preceding quarter, and that the operations of husbandry, so propitious in the commencement, after Harvest, have been carried forward during the Winter, and hitherto in the Spring, in that well-*tided* order and condition, as to induce us to form the most hopeful prognostication of the ensuing crop. The wheat crop everywhere looks well, and never was there more land under it: The grass lands are as forward as in the mildest seasons: The proportion of old pasture lands ploughed up for oats, is great beyond example, and all seeds hitherto put in the ground, have been accomplished in the very best stile; while every remaining branch of agricultural labour is in an unusual degree of forwardness.

The weather, after all, during this quarter, however conducive it has been to vegetation and good tillage, has neither, in general, been moderate nor uniform, but, on the contrary, changeable in the extreme; sometimes, as of late, exceeding warm, but more generally cold and piercing, and very frequently boisterous and stormy to an excessive degree; but it has all along been comparatively dry, the quantity either of snow or of rain having been very inconsiderable.

While with pleasure we state the present favourable prospect as to the future crop, we must still continue to recommend rigid economy in the use of provisions, and to warn the good people of this country, that it is now chiefly to corn merchants and dealers in grain, (whose very exertions they have been *taught* to curse and deprecate) that they must look forward to, for near 5 months to come, for subsistence; as the quantity of corn remaining in the hands of the cultivators of the soil, never was in recollection, nor perhaps in record, so very little indeed at this day of the year.

With respect to the *price* of provisions, one remark has applied throughout, which is, that while the *news-men* (honest souls!) have never ceased to announce, from week to week, and from day to day, that "here it was *fallen*, and there it was *fallen*," it has, nevertheless, as if in perfect despite of their intelligence, continued to advance, and that in no small proportion: Thus, wheat, the great staff of life, which we noticed in the

preceding quarter to have reached at what we then thought its ultimatum, viz. 70s. the boll, is now come to 78s.; and barley, that was, 3 months ago, thought beyond all sufferance high, at 52s., has since reached to 63s.

RETURN of Grain, Flour, &c. imported and exported at Leith, from the week ending January 10th to the week ending April 4th, inclusive, being 13 weeks in all, converted into quarters in the same proportion, as stated in Vol. I. p. 474.

	Qrs.
Imported coastways -	44,386
Foreign - - -	12,364
Total imported	56,750
Deduct *exported* coastways	17,093
Remains for Edinburgh, &c.	39,657

Oat-meal sold in Edinburgh market for the last 13 weeks, ending March 31st 1801, Lothian 4472 bolls,—South Country 1400 bolls. Wheat sold in Haddington market, for the last 13 weeks, ending April 3d, 2391 bolls, which is less than two-thirds of the quantity in the preceding quarter.

Extract of a Letter from a Gentleman near Perth, March 31st.

The weather in this part of the county, for three months by-past, though very variable, and often on the extreme in most respects, yet on the whole has been favourable for forwarding the different field-works, and likewise friendly to the fodder. The oat seed commenced with some farmers in this neighbourhood about the first week of March, but, after getting on very lively for a few days, an entire stop was put to the work by a smart frost, accompanied with slight showers of snow. On the Grampian hills, within our view the snow fell in great quantities and lay very deep. Sowing was interrupted for nearly three weeks, but now goes on again briskly, and I am happy to add the ground appears in excellent state for the seed.

Vegetation, both on the wheat and sown grass fields, has made a most pleasing appearance within these three days, and I most sincerely hope it will now continue free from any more checks, till there is again plenty of *keep* for bestial without doors, which is indeed much wanted and anxiously looked forward to. I trust also that *man's labour* for a reproduction of corn from the ground will be blessed with success. I cannot here omit mentioning the very useful substitute for fodder, *whins*, so much resorted to over all this country, and with the best possible effect,

being most conducive (when properly prepared by threshing) for the health and good spirits both of cattle and horses. No doubt the labour necessary for picking the green tops from the old bushes is very considerable, and will never be afforded when fodder is to be had at its ordinary price. This might however be obviated in time coming, by sowing whin seed on ordinary land, in which case the crop might be cut with the scythe, as recommended by some writers well known to many of your readers. For my own part, I had no occasion to try the whins this winter for my stock, but am credibly informed that some cows, kept almost solely on them, have given milk in nearly equal quantity as if they had been fed on cut clover, other circumstances considered.

At a time like the present, when the improvement of waste lands is so much talked of, it is with singular pleasure I have in view an object of that nature on the opposite bank of the Tay to where I reside.—What I here allude to is, *trenching with the spade*, a considerable tract of exceeding rough stony ground, such by nature as no plough could penetrate. Indeed, after the operation of trenching has been gone about, and the stones brought to the surface, they lye so thick as almost to cover the face of the ground; however, they will now be ready at hand to be applied to many useful purposes. Were it not for this laudable exertion of the worthy proprietor, (the D- k--e of A.) this extensive field, though most favourably situated on a fine sloping bank to the south, must have lain for ever useless and unproductive to the country.

Were such a plan as this to be generally followed by proprietors of extensive estates, it would have the happy tendency at present to give employ to the vast numbers of operative tradesmen, particularly weavers; and in the end, make a lasting improvement on the face of our country at large.

Prices of grain here, are nearly as follows:

Wheat 66s. to 70s. barley 45s. to 50s. oats 42s. to 45s. all per boll. Oat-meal 2s. 11d., barley-meal 1s. 10d., pease-meal 1s. 11d., all per peck. Beef 6d. to 7d., mutton 8d., veal 6d. to 7d., pork 6d. per lb. of 16 ounces. Butter 1s. 2d. to 1s. 3d. per lb. of 22 ounces.

Extract of a Letter from Aberdeenshire, March 27th.

We have had a most favourable winter; our seed time commenced before the end of February, and by the 8th March a great many oats were sown. The weather then changed to frost, with frequent showers of snow, which reduced the fields to a perfect mire, and upon the 20th we had a more intense frost than what we experienced any time during last winter.

Some of the sown lands were then but half harrowed, while in others the young plants were well rooted, so if none of them have received injury, we need never be afraid of severe weather in seed time.

There has been little fluctuation in the grain markets of the county since my last, but the prices are now equalized in the different districts. Fodder is still extraordinary dear, being not less than from 20s. to 25s. per boll of grain, Aberdeenshire measure. Oat-meal sells at 45s., beer do. 32s. per boll. Potatoes 2s. per peck, of 35lb. Averdupoize. Seed oats have been as high as 52s. per boll.

Retail-prices of meal, potatoes and butcher-meat in Aberdeen market. Oat meal 2s. 9d., bear-meal 1s. 10½d., potatoes 2s. 6d. per peck. Beef 5½d. to 6½d., mutton 3d. to 6d. per lb.

Inverness Quarterly Report.

Prices of grain have kept pretty steady. Wheat may be noted at 60s. to 63s.; barley 45s. to 50s.; oats 45s. to 50s.; pease 45s. to 54s. per boll; oat meal 48s. to 50s. per boll of 9 stone; bear meal 38s. to 43s. per boll of 10 stone; potatoes at 2s. per peck, and very scarce. Five firlots of oats are given for the boll.

The poor about the town of Inverness continue to be supplied with meal at reduced prices, and, from the liberal subscriptions given to the fund, it is expected they will be accommodated upon the same terms till the arrival of next harvest. Hay sells currently at 2s. per stone. Provender of all kinds is also extremely high, and difficult to be got. Fortunately the winter and spring have been open and mild, otherwise the consequences might have been serious to those who held a stock of cattle. Drovers are now buying lean stock briskly at good prices, a circumstance greatly in favours of the Highland districts. Great ewes are also in request, and currently sell at the advanced prices of 14l. and 15l. per score; beef and mutton are 6d. per lb., but will probably advance soon, as the fat is nearly exhausted. Few turnips remain, but that valuable root has paid better this season than usual, having in many instances afforded a return of 12l. and 15l. per acre, when used in feeding of cattle and sheep.

The spring work is in a forward state, a great proportion of oats and pease being sown before the middle of this month, when we had severe frosts accompanied with snow, which for a time stopped further progress. The weather is now again become extremely mild for the season of the year, and present appearances give us reason to expect that the labour of the husbandman will this year be crowned with success, and that

we will not have a third deficient crop to add to the two that are past. The young wheats are luxuriant, the clover fields look well, and the grass fields, in general, promise to be much earlier than usual.

Many hundreds of the poor people of this country, from their distressed circumstances, are driven to the direful necessity of emigrating to America, and several vessels are engaged for transporting them thither. One person has already received above 1000l. Sterling, as a deposit from the misled emigrants; others, who formerly left this country, did not better their condition, but their anxiety to remove from their native homes sufficiently proves their present uncomfortable state.

Agricultural Report for the County of Tweedale, forth Quarter ending March 30th 1801.

The weather continuing good during February, and to the 12th of March, the ploughing was almost all finished before the usual time of sowing, consequently the seed commenced by the 1st of March, and in many places on the last week of February: But upon the 16th a severe thunder-storm, attended with hail and snow, so very materially altered the weather, as to stop all sowing opperations until the 25th, when the weather again set in good, and continues so until *this date*; the oat and pease seed will be finished by the second week of April. In consequence of the winter and spring being uncommonly fresh and mild, not only the foggages have been of the greatest service in supporting the wintering cattle, and preventing the general alarm of scarcity of fodder; but the turnip crop has been also brought to the greatest advantage perhaps ever experienced in any former year, as few of them rotted in the fields, and scarce a day in the season but afforded free access either for field or stall-feeding. It is obvious, however, that there will be little grain in this county after the ground is sown, as the grain is almost threshed out, the sowing this year being considerably more extensive than usual. As the weather hath now taken a favourable turn, we look forward with hope to an abundant crop both of grain and grass, as upon the latter our cattle must have their principal supply by the middle of April, the fodder (notwithstanding a good winter) being almost exhausted.

The prices of grain and meal have experienced little alteration these two months past, excepting what was bought for seed.

Oat-meal sells at present at		2s. 8d.	per peck
Bear, do.	- -	2 0	
Pease, do.	- -	2 1	
Pot barley	- -	4 0	per stone

Seed oats from L. 2 0 to L. 2 5 0
Seed pease from 2 8 2 10 0 } per boll.
Beer from 2 5 2 8 0

Beef from 4d. to 6d. per lb. Dutch
Mutton 6d. per lb. do.
Fresh butter 1s. 2d. per lb. of 23 oz.
Eggs 6d. per dozen
Great or heavy ewes from 15l. to 17l. per score
Ready sale grass-cattle.
Large demand also for horses, and prices near doubled since Martinmas.

March 30th 1801.

Middle-Ward of Lanarkshire Quarterly Report.

The oppenness of the winter and spring having proved favourable for field-labour; the work of the plough is in so much forwardness, that many farmers have been almost idle for some time past, and are in general perfectly ready for the seed-work, which is now much retarded by the late stormy weather. There is just now the greatest quantity of land under tillage in this part of the country, ever remembered, including several large fields of old pasture land, which are in good condition for carrying corn crops, though some of the early ploughed land is a little washed with the rains, and quicks are making their appearance in some fields where the land is not perfectly clean: Although the great quantity of seed which will necessarily be used this season, must contribute to keep up the markets for the present, yet the extra sowing affords great hopes, that the ensuing crop will have the wished-for effect, in reducing the present extravagant price of grain.

From the great diversity of soil in this county, different kinds of seed are sown to suit the different soils. Oats being our principal crop, the kinds most generally used are *air seed*, (or perhaps more properly early seed) Tweeddale, or Blainsley, and late seed: Another kind of oats has been introduced here, which was brought from Cumberland about two years ago, very much like the small Dutch, and commonly called *potatoe oats*, which appear to answer very well when sown on good land, and produce considerably more meal per boll than the other kinds ordinarily used; there is more demand for them this year than can be answered.

The wheat sown last season looks promising, though the quantity is much less than on some former years.

The favourable winter, with the exertions that have been made in providing substitutes for fodder, have, in a great mea-

sure, prevented the fatal consequences so much feared, to the cattle, and the price of hay is already reduced, being at present from 14d. to 16d. per stone. Many individuals have used heath and toppings of whins for their cattle; the last of these is allowed to have kept the cattle in good habit, and to produce very good milk, when used for cows.

Our markets for grain have been considerably on the advance since last report, but are now somewhat reduced. Oatmeal retails at present about 2s. 9d. per peck; pease and barley-meal about 2s 1d.; butcher meat from 8d. to 10d. per lb. Tron weight; butter from 1s. 4d. to 1s. 6d. per lb.; seed-oats are from 40s. to 47s. per boll, but the potatoe-oats are considerably higher; Pease and beans run from 50s. to 55s. per boll; potatoes vary very much in price, and may be about 2s. 3d. or 2s. 4d. per water peck, or 5s. per corn firlot.

March 30th.

Extract of a letter from Glasgow, April 2.——The mildness of the winter has been very favourable for getting tillage forward; but the unsettled weather which we have had since February, has prevented any sowing as yet. As the weather is now become very fine, beans and oat seed may be expected to be completed soon. The wheat has a fine appearance, and seems to do well. Fodder is scarce and dear, notwithstanding the open winter. Our market is tolerably well supplied with meal and all kinds of grain. We have had a considerable quantity of flour, and India corn meal from America of late, and of a very good quality. Although our markets are well supplied, prices keep very high.—Annexed you have the currency of our market.

Present prices of grain, &c.

American wheat	72s. to 74s. per boll of 240 lb.		
Dantzic ditto	75s. per ditto	Linlithgow	measure.
Hamburgh ditto	70s. to 72s. per ditto	ditto	ditto
British ditto	68s. to 73s. per do.	do.	do.
Ditto barley	50s. to 56s. per do.	Stirling	measure.
Foreign ditto	48s. to 54s. per do.	do.	do.
Ditto beans	48s. to 52s. per do.	do.	do.
British ditto	48s. to 52s. per do.	do.	do.
Ditto pease	50s. to 54s. per do.	do.	do.
Ditto oats	45s. to 50s. per do.	do.	do.
Oat meal	44s. to 45s. per do. of 140 lb.		
Pease ditto	33s. to 36s. per do. of do.		
Barley ditto	32s. to 34s. per do. of do.		
Indian corn ditto	9l. per puncheon of 800 lb.		
Ditto	2l. 4s. per barrel of 196 lb.		

American flour 4l. per barrel of 196 lb.
Flour of our own manufacturing 5l. 10s. per sack of 2¼ cwt.
Beef 10d. to 1s. 2d. per lb. Tron weight.
Mutton 1s. to 1s. 2d. per do. do.
Veal 9d. to 1s. 1d. per do. do.
Hay 1s. 4d. to 1s. 6d. per stone do.

ENGLAND.

Extract of a Letter from a Gentleman in Lincolnshire.

I am happy to inform you, that we have the prospect of getting the inclosure-business, which I formerly mentioned to you, brought to a speedy termination. On this occasion, great praise is due to Sir Joseph Banks, Bart. who has conducted the affair in a most regular and judicious manner. Several attempts had formerly been made by the late Duke of Ancaster, and others, to effectuate the same object, which were baffled by the opposition of those concerned; nor will it excite wonder, that a difference of opinion should prevail in carrying this matter into execution, seeing that 50 parishes and 3 market-towns are interested in the inclosure, and that the common in question contains betwixt 40,000 and 50,000 acres.

Respecting our markets for corn, &c. I beg leave to say, that wheat sells from 123s. to 150s.; barley from 70s. to 84s.; oats from 40s. to 60s.; beans from 80s. to 100s.; all per quarter of 8 strikes, or Winchester bushels. Beef is 8s. per stone of 14 lb.; pork 9s. per ditto; mutton 8d. per lb. Our crops were very partial this season. Upon clays and heavy soils, they were exceedingly defective, but, on the fens and high wolds, they were much as usual. Poor-rates are double their usual extent.

Hull, 19th March.——At our markets on Tuesday, little was done. The prices were as follows: Wheat 100s. to 135s. Barley 68s. to 72s. Oats 35s. to 55s. Beans 74s. to 84s.—all per quarter. Butcher-meat from 7d. to 10d. per lb. Bread flour 5s. 6d. Coarse ditto 4s. 6d. Fine 6s. 6d. per stone. Potatoes 17d. and 18d. per peck. Butter 18d. per lb. Cheese 7d. to 1s. per lb. The appearance of the country was never more favourable, and all kinds of husbandry going on well. Some of the late sown clover wheats have been attacked by the grub, though not more than usual. The mild winter has saved much fodder, so that no real want of it is yet felt. Public opinion is, that a great and speedy reduction of the price of

grain will take place, although we are shut out from so many places of importation.

Yorkshire Quarterly Report.

About the end of February and beginning of March, the farmers were busily employed in preparing for the spring seed, for which the dry state of the soil was at that time particularly inviting. A considerable reverse in the weather has taken place since, and a deep snow, in particular, has necessarily protracted the business for some time; yet much land has been sown with beans, &c. and some fields with oats and barley, in good condition. The growing wheats have, in general, a most flourishing appearance; the general mildness of the winter has been such as to secure them from any material check as yet, and they have been preserved in an uncommon degree from the ravages of worms and other reptiles; so that there seems at present every reason to augur well of the produce; and, from the uncommon quantity of land sown with wheat, to presume on a more copious supply of that necessary article in a future season, whatever may be the case before harvest. In several parts of the country, some grass ground has been ploughed up for oats and potatoes; but, from the quantity under wheat, and the small proportion left for barley, it may be fairly presumed, that that grain will maintain a high relative value for at least another season.

Though the turnips failed of their usual supply, yet, from the mildness of the winter, and the comparative thinness of stock, hay is rather a declining article.

The price of the best wheat is 19s. barley 12s. oats 6s. and beans 12s. per bushel Winchester, but the prices are falling. Grain of all sorts is much superior in quality to that of last year; and the malt, in general, is observed to make the best ale, in proportion, that has been known for many years past. Potatoes are 4s. per bushel. Many well informed people are of opinion, that corn will not speedily be reduced to a moderate rate, unless in case of a peace, which probably would much reduce the price.

The cattle and sheep are scarce, but mostly primely fattened; sheep on turnips, &c. have fattened uncommonly well, and been generally very healthy. Fat cattle at Wakefield and Rotherham markets are already selling at 10s. per stone of 14 lb.; and fat sheep at 10d. per lb. sinking the offal. Beef and mutton from 8d. to 9d. per lb. and an advance is feared; butter 1s. 6d. per lb. lean stock, and cows, and calves, dear beyond all precedent. Good horses for the saddle, and all work, sell at high prices; ordinary ones are with difficulty turned into money.

The wages of labourers have been but little advanced of late, and it is among the lamentable circumstances resulting from the present dearness of bread, that that class of men, who have hitherto been enabled to keep a cow or two for their families, from the principle of our poor's laws, "*that no person shall* "*be entitled to parochial assistance while possessed of any sort* "*of property*," have before them the cheerless prospect of being obliged to sell their cows for bread. It is to be wished and hoped, that a suitable remedy was devised, for relieving such of the above description of persons as more particularly from large families of children, &c. may be in need of assistance. That assistance is a *wretched boon*, which is not to be afforded until a man be a beggar.

March 21.

Extract of a Letter from a Farmer near Wakefield, March 27.

The winter having proved favourable, turnips kept improving till Christmas, where they were free from the grub, and have turned out a superior crop to what was expected. Fat cattle, of course, have come pretty regularly to market, and we are as yet tolerably well supplied both with beasts and sheep. Prices are, however, upon the advance, and beef is worth 9s. and 10s. per stone of 14 lb. sinking the offal. As the weather has set in fine, I trust it will not go higher, for grass sheep may be expected at market earlier than usual.

Our operations in the field have been much retarded since the 11th instant, by a great fall of snow. Previous to that time, we had remarkable fine weather, when many beans, and some barley and oats, were put into the ground. The land is again getting into good order, and we are sowing oats and barley very rapidly. The high price of grain has induced many farmers to plough out their grass land; and I hope, if it please God to continue the favourable weather, that grain will come, after next harvest, to a reasonable price. We have abundance of wheat sown, and I never saw it look better at this season of the year.

Our market is very moderately supplied with wheat, but oats are plentiful, and have lately declined in price; also beans and pease. Fine barleys continue high, much of the best sort being ground down for bread. The ordinary qualities have rather a dull sale, the maltsters having given up work, not chusing to lay up a stock upon the present terms. At Wakefield market, this day, prices were—wheat, from 130s. to 174s.; barley 68s. to 84s.; oats 46s. to 60s.; beans 80s. to 86s.; grey pease 85s. to 90s.; all per quarter of 8 Winchester bushels.

Lean cattle are higher in price than ever known with us; at least 30 per cent. above what was given last spring. This,

in some measure, is occasioned by the quantity of turnips on hand, and the promising appearance of the grass lands. The great slaughter of half fed beasts at the latter end of the last year has not only encreased the scarcity, but likewise augmented the demand.

Extract of a Letter from a Farmer in Wales, March 24.

In this part of the Island we have had a most favourable winter, little frost, and no heavy rains before the 11th of this month. At that time farm work was going on briskly, and great progress made in the sowing of spring grains; but a succession of wind, rain, and hail showers, has put a general stop to seed work. Some wheat was sown about the beginning of the month, and an uncommon quantity of pease and beans, though we have great difficulty in procuring seed, which was chiefly purchased in Brecknockshire, and at Bristol, otherwise these grains would most likely have been all sown before the weather broke. The greatest part of the oats were sown in good order before the rain; but I fear they will now suffer, as the land is so wet. The extent of land sown with this grain, is much greater than usual, the price of barley being beyond the reach of many people who have to purchase seed. The young wheats, in general, look well, those early sown were so forward as to require to be eaten down with sheep. Great preparations are making for planting potatoes, and more land will be occupied with this root than usual.

Owing to the favourable winter, and the great demand for oxen, hay and straw have lowered much in price. Good hay can now be bought for 50s. and 60s. per ton, which, last year at this time, was worth 8l. Every other article, however, is on the advance; wheat sells from 56s. to 60s. per bushel of 20 gallons; barley from 36s. to 40s. per ditto; pease, beans, and tares, 38s. per ditto; oats from 22s. to 25s. per bushel of 32 gallons; butcher-meat, 6d. to 9d. per lb.; fresh butter, 1s. 3d.; salt ditto, 1s. 1d.; cheese, 8d. to 1s. At our Cardiff fair on the second Wednesday of March, there were more Englishmen appeared to purchase cattle than ever known so early in the season, and every kind, able to walk, went off at high prices. We have had a supply of barley, which has given us considerable relief, but much of it is sprouted, and inferior to what is raised in this part of the country. It is chiefly bought by small farmers, many of whom are entirely out of corn; and the lower class of tradesmen and shop-keepers, who cannot have relief from the parish, till they part with their little stock. The present period to these classes is truly distressing, but as for the labouring people, they are all on the parish funds, and will not eat sprouted barley, but call for the best, let the price be what it will. A curious circumstance hap-

pened last week to one of my neighbours, who is overseer of the poor, and has a family of 12 children, with a dear farm and heavy taxes: A man, who has a wife and four children, and earns 10s. per week, which, with 9s. per week from the parish, is 19s altogether, came to him, and demanded an increase of his allowance. The overseer told him he should receive no addition, as he was in better circumstances than himself, and that he would be glad to change situations; upon which the pauper immediately removed his wife and family to the overseer's house, kept possession for a night, and with difficulty was got quit of next morning. This circumstance may give you a slight idea of the defectiveness of our poor laws; in fact, they prevent every degree of industry among those who can legally claim support, while they are an intolerable burthen upon the industrious part of the community.

Extract of a Letter from a Farmer near Pontefract, April 2.

I have perused your publication with great pleasure, and am glad to see the first of the sciences illustrated in a practical manner. My mite of intelligence is at your service, as I consider it to be an incumbent duty upon every farmer, to support a work so well calculated for the information of rural practitioners.

The sowing of the spring grains was well advanced three weeks ago, but the continued bad weather since has much retarded the progress of that necessary operation. The land is now getting into good order, and we have the prospect of concluding our seed work in a husbandman like stile.

The lambing season has been tolerably favourable, and vegetation being forward, many cattle are already turned out to grass, which gives us a hope, that the butcher markets will be earlier supplied with grass beef, than last year. Turnips are getting into flour, and becoming of little value for the fattening of stock, especially where there is grass. Lean cattle are to all appearance not wanting in quantity, but like as in most other articles, the quantity is exceeded by the demand; and I am certain, that since I was a farmer, they never sold at such extravagant prices. It ought to be recorded, that a jobber near Halifax declared in a public company, that he had sold 40 long horned cows for 900 l. Sterling, and several lots at 20 l. per head besides.

Fat cattle in our markets are worth from 10s. to 12s. per stone of 14 lb., according to quality; beef is retailed from 8d. to 10d. per lb. averdupoise; mutton, 8d.; pork and veal much the same; wheat, 55s. to 58s. per load, of 3 bushels; beans, 30s. to 35s. per ditto; barley, 80s. to 84s., and oats 40s. to 60s., both per quarter of 8 bushels; wheat at present is rather a dull article.

Extract of a Letter from London, March 30th.

We have had a very mild winter and spring, and the different operations of husbandry in the counties round London, are in great forwardness, the most part of the seed being got into the ground in fine order. The quantity of wheat sown is much greater than in former years. In Middlesex, the strong clays, which are in general under alternate crops of beans and wheat, are this year full two-thirds in wheat, and the young crop promises well. The early field-pease for the London market, are very forward, and at present promise a luxuriant crop.

We have had full markets of grain for two months past. The price of oats has been coming down slowly. Wheat has been fluctuating in price; a month ago it sold as high as 9l. 9s. per quarter; since which it has been at 8l. to 8l. 4s. and is now at 8l. 10s. to 9l. 4s. for fine English wheat. Barleys of all sorts have been very high, but are now looking downwards at this day's market; they are from 5s. to 7s. lower than last week. Beans are about 10s. lower than a month ago. Hog-pease have been nearly stationary. Grass-seeds fluctuating much; at times 10s. per cwt. higher than the present prices. For 2 years past, parsley has been sown as a pasture-grass for sheep: the common parsley is preferred to the curled, being more hardy. The prices of butcher-meat have been very high. To-day there has been a great shew of both cattle and sheep in Smithfield, which have sold at a small reduction of price from those formerly given. The price of hay is coming down. Straw is considerably advanced within the last three weeks. The potatoes, in general, have turned out but very ordinary. There has been a considerable quantity of American flour lately sold.

Annexed you have the current prices of grain, seeds, butcher-meat, &c. at this day's market.

English wheat 8l. 10s. to 9l. 4s.
Foreign (red wheat) 6l. 6s. to 7l. 14s.
Feed oats 35s. to 42s.
Poland's 44s. to 48s.
Fine white ditto for mealing, 48s. to 50s.
Barley 42s. to 92s.
Tick beans 56s. to 64s.
Small ditto 66s. to 70s.
Hog pease 74s. to 78s.
Porter malt 50s to 76s.
Pale ditto 84s. to 95s.
Flour 6l. 10s. per sack.
American 80s. to 89s. per barrel.
Spring tares 16s. to 17s. per bushel.
Boiling pease 100s. to 115s.
Hay 5l. 10s. to 6l. per load.
Straw 1s. 6d. to 1s. 8d. per truss.
Rye-grass 40s. to 48s. per quarter.

Clover Seeds.

Red 84s. to 150s. per cwt.
White 80s. to 100s.
Trefoil 46s. to 56s.
Turnip-seed 42s. per buſhel.
Burnet-seed 2s. per lb.
Parsley 16s. per buſhel.
Curled do. 20s. do.

Beef 5s. to 6s. 6d. per ſtone of 8 lb.
Mutton 6s. 6d. to 8s.
Veal 6s. to 8s. 6d.
Pork 6s. 6d. to 7s.

Retail.

Beef 10d. to 10½d.
Mutton 11d. and 12d.
Veal 12d. to 14d.

Northumberland Quarterly Report.

The last three months have been uncommonly favourable for agricultural operations. The sowing of beans and pease commenced the first week in February: towards the middle of the month, an interruption of a few days took place, occasioned by a severe frost, which gave way about the 21st; since that period, we have had one of the finest seed-times, for all kinds of grain, ever remembered, and the only lands now remaining unsown are a few patches, on which the turnips are yet standing. The quantity of land covered with wheat is greater than ever was known in this district; for, besides the whole of the summer-fallows, almost every acre of turnip-land has been sown with wheat, as fast as the grounds were cleared, which has considerably diminished the extent of the barley land.

The high price of seed-oats made it a hazardous game to plow out indifferent grass-lands; of course, they have been suffered to remain as they were, and the very best lands are ploughed out in lieu of them: so much good land was probably never sown with oats, in this district, in one season: When these circumstances are combined with the very fine seed-time and excellent state the land was in at the time of sowing, together with the remarkable fine weather since, and continuing at present, there is every reason to hope for an abundant harvest, and in which hope we are encouraged by the healthy and promising appearance of the growing crops, particularly the wheats.

The clover and artificial grasses are in a greater state of forwardness and more luxuriant upon the dry lands at present, than, in some years, upon the first and second Week of May. The old grass lands are also springing with a vigour and closeness I seldom remember to have noticed.

The turnips have stood the winter very well; the few that remain are getting into flower, and declining in value.

Hay and straw are both very scarce, the former selling from 7l. to 8l. a ton. Many farmers have no straw left.

This is a district of large farms, the natural source for the supply of the summer markets with grain; but I am sorry to add, that the prices have been so tempting through the winter,

that the stack-yards shew no signs of abundance, and wear a very different aspect to what they generally do at this time of year; and the quantity for the supply of the summer markets, I am afraid, will be found considerably deficient. If we have not an early harvest, God knows what may be the consequences.

The demand for fat stock has been encreasing through the winter; and the Leeds, Wakefield, and Manchester dealers have been repeatedly out, and purchased great numbers of both cattle and sheep; a certain sign that there is a scarcity nearer home. Cattle that are good fat are sold for 9s. a stone, sink. and sheep for 9d. per pound, sink. Such prices occasion a great many half-fat cattle to be killed, which ought to have been kept on for the summer markets. Hence the prospect of a scanty supply and high price of butcher-meat through the summer.

Prices of Corn.

Wheat	18s.	to	19s.	per bushel, Winchester.
Barley	9s.	to	10s.	Do.
Oats	5s.	to	7s.	Do.
Do. for seed	8s.	to	10s.	Do.
Beans & pease	10s.	to	13s.	Do.
Potatoes	4s.	to	5s.	Do.

April 4. 1801.

Extract of a Letter from Ripon (Yorkshire), April 4.

The expectations entertained when I last wrote you, have not been realised; as grain, since that time, has advanced considerably, and there is no prospect of its being lower through the summer months. Our spring seed work is nearly finished, and the land was sown in excellent order. Wheat, upon last year's fallow, has a promising appearance; an additional quantity was sown this spring, after turnips. Animal food, of all sorts, is at present high priced; but I hope, if the season continues favourable, that markets will return to reasonable rates.

The current prices of produce are: Wheat, 17s. 6d. to 19s.; Barley, 10s. 6d. to 15s.; Oats, 6s. 3d. to 8s.; Beans, 9s. 6d. to 12s. 6d.; Grey Pease, 9s. to 11s. per bushel, above one-twentieth larger than Winchester. Beef, 7d. to 9d.; Mutton, 8d.; Veal, 8½d.; Pork, 8½d.; Lamb, 12d.; Butter, 15d. to 18d. per pound. Potatoes, 4s. to 5s. 6d. per bushel.

The lambing-season has been favourable, and we have a good quantity of lambs.

Extract of a Letter from Newcastle, April 4.

Our market was indifferently supplied with wheat this day, yet the sale was dull; best Northumberland wheat did not sell higher than 148s. per quarter; Foreign red, from 108s. to 128s. Rye was in demand, and sold from 100s. to 107s. Barley was rather lower than last day, the demand being inconsiderable. Oats also declined in price; those called *feed-oats* being from 30s. to 36s., and *mealing ones* from 38s. to 48s. Beans, from 64s. to 74s. and hog-pease, 68s. to 76s. all per quarter. Fine flour, 112. to 115s. per sack.

Extract of a Letter from Hull, April 8.

We attended the market on the 28th ult., with intention of writing you then, but finding every thing very flat, falling prices, &c., therefore deferred writing till this week, as the communication would not be too late. We attended yesterday, and found the state of markets much the same as last week, except for a few samples of home wheat; but foreign grain was the principal supply,

Prices.

Tuesday March 31.		Tuesday April 7.	
Wheat	115s. to 136s. Qr.	Wheat	100s. to 130s. Qr.
Barley	65s. to 68s.	Barley	60s. to 65s.
Oats	to 50s.	Oats	38s. to 50s.
Beans	68s. to 70s.	Beans not saleable.	

Little business done on either day.

Butcher's meat 8d. to 10d. per lb.
Butter 18d. per lb.
Flour 4s. 6d. to 7s. per st.
Ditto American 5l. per barrel.

Linseed 68s. to 73s. qr.	Rapeseed none at market.
Do. cakes 14l. 14s. ton.	Do. cakes 8l. ton.
Hay 5l. ton.	Straw 50s. ton.

Good supply of fish, sells from 2d. to 5d. per lb.

The soup subscriptions are still kept up, which are a great relief to the poor during such distressing times; the quantity delivered is much increased since our last account. Every thing in the country favourable in appearance. Grain and other articles of provision expected lower.

Imported, from 20th December 1800, to 16th March 1801, as per Custom-House List.

Wheat	16,073 qrs.	Oats	3,860 qrs.
Beans	161 do.	Pease	1,241 do.
Rye -	178 do.	Linseed	361 do.
Barley	2,158 do.	Rapeseed	769 do.

	Tons.	cwt.	qrs.	lbs.		
Indian-meal	4	18	3	15		
Wheat flour	0	9	1	18		
Linseed cakes	6	0	0	0	and	1000 cakes.
Rapeseed do. -			-	-	-	9,036 do.

Several arrivals of corn and flour that we cannot yet get particulars of, from Hamburgh, Bremen, Holland, America, &c.

The pamphlet on the *Grub* we have got, which we will send you by some way in time for your next Number. We hear of riots in various parts of the country. The populace here keep quiet. Poor's rates increasing very fast.

LONDON—March 30.

AVERAGE PRICES OF CORN.

Current Prices of Grain for the Week.

Winchester Measure of 8 bushels.

Friday.			Monday.		
Wheat	100s. to 160s.		Wheat	100s. to 160s.	
Fine ditto	176s. to 178s.		Fine ditto	176s. to 178s.	
Dantzic	159s. to 165s.		Superfine	176s. to 180s.	
Rye -	70s. to 84s.		Rye	80s. to 104s.	
Fine ditto	100s.		Fine ditto	104s.	
Stained barley	45s. to 68s.		Stained barley	46s. to 68s.	
Malting ditto	68s. to 92s.		Malting ditto	62s. to 92s.	
Fine ditto	86s. to 94s.		Fine ditto	86s. to 94s.	
Brown Malt	76s. to 95s.		Brown Malt	86s. to 95s.	
Pale ditto	80s. to 90s.		Pale ditto	80s. to 90s.	
Fine ditto	90s. to 100s.		Fine ditto	90s. to 100s.	
Hog Pease	60s. to 74s.		Hog Pease	66s. to 74s.	
Boilers	98s. to 112s.		Boilers	100s. to 112s.	
Fine ditto	112s. to 114s.		Fine ditto	112s. to 114s.	
Fine Suffolks	104s. to 115s.		Fine Suffolks	104s. to 115s.	
Fine Pearls	112s. to 114s.		Fine Pearls	112s. to 114s.	
Small Beans	62s. to 72s.		Small Beans	62s. to 72s.	
Tick Beans	52s. to 55s.		Tick Beans	50s. to 56s.	
Kiln-dried ditto	62s. to 67s.		Kiln-dried ditto	52s. to 67s.	
Oats	36s. to 44s.		Fine Oats	36s. to 44s.	
Fine Polands	30s. to 50s.		Fine Polands	48s. to 50s.	

Official Return of Flour, Mansion-House, Tuesday, March 24. including from the 14th of March to the 20th of March.

Total 7,710 sacks.—Average price 129s. 9½d.—8s. 2¾d. lower than last return.

Average Prices of Corn per Quarter.

Great Britain, for week ending March 21.

	Eng. & Wales.	Scotland.		Eng. & Wales.	Scotland.
Wheat	133s. 2d.	127s. 3d.	Beans	80s. 8d.	86s. 10d.
Rye	111s. 3d.	76s. 8d.	Pease	90s. od.	87s. 1d.
Barley	90s. 7d.	65s. 4d.	Oat-meal	83s. 7d.	43s. 5d.
Oats	47s. 2d.	49s. 1d.	Big	0s. od.	68s. od.

Hay and Straw for the week.

	Borough.		St James's.		Whitechapel.	
	L. s.	L. s.	L. s.	L. s.	L. s.	L. s.
O. Hay	5 8	to 6 0	Hay 5 5	to 6 6	Hay 4 10	to 6 6
Clover	5 10	to 6 6	Clover 0 0	to 0 0	Clover 6 6	to 6 18
Straw	2 8	to 3 6	Straw 2 8	to 3 0	Straw 2 10	to 2 10

Smithfield.

Exclusive of the offal, which consists of head, entrails, and hide, is worth about 1d. per lb.—Per stone of 8 lb.

	Friday.		Monday.
Beef	5s. od. to 7s. od.	Beef	5s. od. to 6s. od.
Mutton	6s. 6d. to 8s. od.	Mutton	6s. od. to 7s. od.
Lamb	0s. od. to 0s. od.	Lamb	0s. od. to 0s. od.
Veal	6s. od. to 8s. 6d.	Veal	6s. 6d. to 7s. od.
Pork	6s. 4d. to 8s. od.	Pork	6s. 5d. to 7s. 6d.

Friday—Beast 850—Sheep 2000.

Monday—Beast 2100—Sheep 9760—Pig 320.

Newgate and Leadenhall.

	Saturday.		Saturday.
Lamb	0s. od. to 0s. od.	Beef	5s. 4d. to 6s. 8d.
Veal	6s. od. to 7s. od.	D. in S.	5s. 4d. to 5s. 6d.
Pork	7s. od. to 7s. 8d.	Mutton	6s. od. to 6s. 8d.

Sheep Skins.—Friday, March 27.

Sheep	4s. od. to 6s. 3d.	Lamb	0s. od. to 0s. od.

Price of Tallow in London.

	s.	d.		Only market is on Friday.	Per cwt.
St James's market	4	9		Town tallow	80s. od. to 00s.
Clare market	4	8½		YellowRussia	78s. od. to 79s.
Whitechapel market	4	8		White do.	77s. od. to 00s.
				Melted stuff	64s. od. to 64s.
				Ditto rough	42s. od. to 48s.
	13	1½		Graves	19s. od. to 00s.
				Good dregs	13s. od. to 00s.
Average Price	4	8½		Yellow soap	77s. od. to 86s.
				Mottled soap	94s. od. to 00s.
				Curd ditto	98s. od. to 00s.

Candles - - 12s. per dozen.
Moulds - - 13s. per dozen.
The above price is to the trade.

Postscript to Scots Intelligence.

Extract of a Letter from Haddington, April 10th.

Our market was this day tolerably well supplied with all sorts of grain, especially pease and beans. Wheat sold slowly, and at prices rather reduced; highest 73s. but much of what was presented, was of inferior quality, consequently, the average is below that of last day; barley and oats sold at much about the same rates as for some markets past; viz. the first from 50s. to 59s. the latter from 34s. to 42s. Beans and pease were from 38s. to 45s. Some clean pease of superior quality, sold higher.

As very little grain is sold of late at the sea-ports, almost the whole produce of the country is now *pitched* in the market here, which of course presents a better show than appears in the most productive seasons. The stack yards being now well cleared, gives us the assurance that our supply will in a little time be considerably diminished.

Last week we experienced uncommon warm weather, which made the young wheats and grasses assume a thriving aspect. On Saturday, (April 4.) a change took place, and since that day the weather has been remarkably cold, and unfavourable to vegetation. Some of the wheats upon the thin soils are beginning to look unhealthy, and the young grasses are considerably injured.

By a letter from London we learn, that the premium offered by the Society of Arts, &c. for the greatest quantity of land sown with wheat in spring 1800, is adjudged to Mr Brown, farmer at Markle in this county. Several essays from this neighbourhood were transmitted to the Board of Agriculture, respecting the most proper method of breaking up grass land; and it is probable that some of them will afterwards be sent you for insertion in the Magazine.

Fiars of Grain in Scotland, Crop 1800.

East-Lothian.

Per boll Linlithgow measure.

	1st.	2d.	3d.
Wheat	67s. 3½d.	63s. 1½d.	55s. 3½d.
Barley	52s. 5d.	46s. 11½d.	42s. 4½d.
Oats	38s. 11½d.	35s. 8d.	30s. 9½d.
Pease	46s. 2½d.	41s. 6d.	36s. 8½d.

N.B. No Fiars are struck in East-Lothian for beans or oat-meal. The value of wheat, taken in the proof, amounted to about 26,000l.

Fife.

White Wheat 55s.
Red ditto. 54s.
Barley 42s.
Oats 34s.
Oat-meal by weight 42s.
Oat-meal by measure 41s.
Beans and pease 40s.
Malt 47s.
Rye 32s.

Kincardine.

Oat-meal 43s.
Bear with fodder 60s.
Ditto without fodder 47s.
Oats with fodder 40s.
Oats without fodder 30s. 8d.
Pease with fodder 50s.
Ditto without fodder 40s.
Wheat 65s.

Mid-Lothian.

Best wheat 58s. 9d.
Second ditto 52s. 6d.
Best barley 40s. 7d.
Second ditto 35s. 7d.
Third ditto 32s.
Best oats 33s. 2d.
Second ditto 30s. 6d.
Best oat meal, 8 stone 38s. 2d.
Pease and beans, 41s. 3d.

Aberdeen.

Great oats with fodder 55s.
Ditto without fodder 35s.
Brocked oats with fodder 46s 8d.
Ditto without fodder 26s. 8d.
Bear with fodder 60s.
Ware bear with fodder 54s.
Ditto without fodder 35s.
Farm bear with fodder 41s.
White meal per 9 stone, 41s. 8d.
Farm meal per 8 stone 37s.
Small oats with fodder 32s. 6d.
Ditto without fodder 17s 6d.
Market mal 45s.
Pease 35s.
Wheat 55s.
Rye 40s.

Average-price of corn per quarter in Scotland, for the week ending March 21st, per quarter of 8 bushels.

Wheat 127s. 9d.	Beans 86s. 10d.
Barley 65s. 4d.	Pease 87s. 1d.
Rye 76s 8d.	Oat-meal per boll 43s. 5d.
Oats 49s. 1d.	Big 68s.

OBITUARY.

January 29. 1801.—At Edinburgh, Mr JAMES SYMINGTON, late Publisher of this Magazine.—Mr Symmington was of an amiable and conciliatory disposition, steadily attached to business, and greatly beloved by those who had the pleasure of his acquaintance. When the proposal was made to him of attempting an Agricultural Publication, he chearfully complied with the solicitations of his friends, and hazarded the risk of an undertaking which, at the outset, was precarious and uncertain. The work, as will be seen by the introductory address to this number, is now transferred in favours of Mr CONSTABLE.

March 8.—John Thompson, Esq. of Balbeg, factor to Alexander Murray, Esq. of Broughton.

At Raughton, Yorkshire, after a few hours illness, Mr G. Bewley, a respectable farmer.

In his 100th year, Mr Congreve, farmer, of Deeping Fen, Lincolnshire.

At Raby, Rutlandshire, in the prime of life, Mr J. Geary, farmer and grazier.

At Sandford, Oxfordshire, aged 80, Mr J. Fry, farmer.

At Borg-Apton, Norfolk, aged 71, Mr Edward Bound, farmer there.

At Milford, near Salisbury, Wiltshire, Mr R. Coe, an eminent farmer.

NOTES to CORRESPONDENTS.

We thank the Gentleman who kindly favoured us with "*Essays and Notes on Rural Affairs*," lately published at Philadelphia, which shall be noticed in our next number. Those who wish any agricultural work reviewed in the FARMER'S MAGAZINE,

will take the trouble of sending a copy thereof to the publisher's shop, and it will be taken up in course.

The *Clydesdale Farmer's* letter, under consideration.

Our *Yorkshire Friend's* communication arrived too late for this Number.

Agrestis's valuable paper is received. He will notice that the subject is forestalled by two other Correspondents, but room is still left for his judicious remarks. A continuance of his correspondence is respectfully solicited.

The *North Country Farmer* is a shrewd fellow. His observations shall not be neglected.

An Essay upon *Lime Husbandry* is received, which shall be laid before the public, with all possible speed.

A Letter from Aberdeenshire, "*on the most proper Method of forwarding Improvements*," is just come to hand.

Some of our Friends, to whose superior judgment we pay much deference, having pointed out the propriety of changing the period of publication, the Public are respectfully informed, that the Magazine will in future be Published in the first week of February, May, August, and November, which will permit us to wind up the transactions of each season in a more complete way than practicable under our original plan, particularly for this northern part of the kingdom.

No. 7. will be published on Monday, 3d August. It is entreated that Quarterly Reports and letters of intelligence, may be transmitted on or before the 22d July, as much inconvenience arises when the transmission is delayed till within a few few days of publication. Postage being now a serious business, it is anxiously hoped that our established correspondents will not require a *flapper* to remind them of the time when their favours are expected.

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